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The State of Canada's Forests **2005-2006**

Forest Industry Competitiveness

Canada

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MINISTER'S Message

I am pleased to present you with *The State of Canada's Forests* for 2005–2006. This annual report brings together the most comprehensive and up-to-date information on Canada's forests and forest sector.

The report's theme of industry competitiveness is well chosen. In the past year, Canada's forest industry has reacted decisively to improve its efficiency and meet the challenges of a changing marketplace. It continues to respond to these challenges by diversifying products and markets, and by focusing on innovation.

In the report, you will read about the accomplishments of the forest industry, the economics of British Columbia's mountain pine beetle epidemic and how communities, industry and governments are dealing with a changing sector.

Indeed, Canadians in all sectors have a role in the stewardship of forests. They must balance economic benefits with social and environmental goals, because forests have always had an influence on our country's history and culture, as well as our economy.

For example, the Government of Canada continues to implement initiatives that are designed to improve access to new markets and increase international cooperation on forest issues.

In addition, the provinces are helping maintain the biodiversity of forests through conserving and protecting natural areas, and all of our stakeholders are taking advantage of the expertise within the sector through partnerships.

I hope you will find this year's *State of Canada's Forests* report to be an informative and insightful discussion on the issues affecting this precious natural resource.

Gary Lunn

The Honourable Gary Lunn, P.C., M.P.
Minister of Natural Resources Canada

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Please Note ...

Starting with the 2007 edition, *The State of Canada's Forests* will have a new appearance and a more dynamic presence on the web.

- The paper version of the report will be shorter than in previous years. It will focus on general information about the state of Canada's forests, events over the previous year and the contribution of our forests to the economy, environment and social well-being of Canadians. It will continue to be available online.
- The new web site will contain the same information but will have additional statistics and analysis that will assist users who require that level of detail. This will enable information updates at selected times during the year.

These changes are being made in response to feedback from readers and in recognition of the way people now search for information. The goal is to make the information more current and readily accessible.

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Up FRONT

Overview of CANADA'S FORESTS and FOREST SECTOR

Why report on the state of our forests?

Forests and forest resources are integral to Canadian life. They form an important part of our economy, history, culture, tradition and lifestyle.

Canadians want to know about the state of their forests, how the forest and forest resources are being managed and the factors influencing their future.

The Minister of Natural Resources is mandated, under the *Department of Natural Resources Act*, to report annually on the state of Canada's forests and their contribution to the economy, environment and social well-being of Canadians.

CANADA'S FORESTS ACCOUNT FOR

- up to 10% of the world's forest cover
- about 30% of the world's boreal forest
- more than 25% of the world's temperate rainforest
- 25% of the world's wetlands
- 20% of the world's freshwater

The facts, figures, articles and viewpoints in this report are designed to give readers a better understanding of Canada's forests, help address concerns in the United States, Europe and other markets about Canada's forestry practices, and provide Canadians with the information they want about their forests and forest resources.

This annual report brings together the most comprehensive and up-to-date national information on Canada's forests and forest sector. It is available online at www.nrcan.gc.ca/cfs-scf/sof.

How much forest does Canada have?

Canada covers 882.1 million hectares of land and another 88.3 million hectares of water and 8.7 million hectares of unspecified land, for a total area of 979.1 million hectares. Forests (310.1 million hectares) and other wooded land (92 million (hectares)) make up about 46 percent of Canada's land mass. About 294.8 million hectares of Canada's forest are not reserved and could therefore be available for commercial harvesting. Just under half (143.7 million hectares) of these potentially harvestable hectares is subject to forest management and, of that half, 0.9 million hectares is harvested annually.

CANADA'S LAND CLASSIFICATION
(Million hectares)

Forest land	310.1
Other wooded land	92.0
Subtotal	402.1
Other lands	480.0
TOTAL LAND	882.1
Unspecified land class	8.7
Water	88.3
TOTAL AREA	979.1

CANADA'S FOREST TYPES

Source: Natural Resources Canada, *The Forests of Canada*, 2003

What types of forests are found in Canada?

Of the three main forest biomes in the world, two—boreal and temperate—are found in Canada. (The third biome, tropical forest, does not occur in Canada.) The boreal forest constitutes 77 percent of Canada's forest land. It starts in the Yukon and northeastern British Columbia and stretches across the northern parts of the Prairie provinces, Ontario and Quebec to Newfoundland and Labrador. Boreal forest summers are short, moist and moderately warm; winters are long, cold and dry. Temperate forests grow in eastern Canada where there are well-defined seasons and a moderate climate. Temperate rainforest occurs along much of Canada's west coast.

Canada's forests can be categorized into eight types according to location and combinations of dominant tree species (see map above). Canada's urban forests may be considered a separate forest type. For many Canadians, their day-to-day relationship with trees takes place in the urban forest.

CANADA'S FOREST TYPES

- SUBALPINE FOREST
- COLUMBIA FOREST
- MONTANE FOREST
- COASTAL FOREST
- BOREAL FOREST
- GREAT LAKES–ST. LAWRENCE FOREST
- ACADIAN FOREST
- CAROLINIAN FOREST

NON-FOREST

- TUNDRA
- GRASSLANDS

Source: Natural Resources Canada, *The Forests of Canada*, 2003

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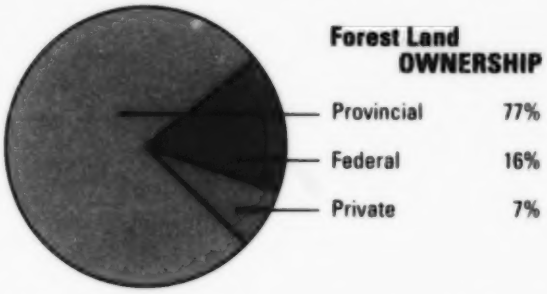
PUBLIC RESOURCE

Most of Canada's forest (93 percent) is publicly owned—77 percent under provincial or territorial jurisdiction and 16 percent under federal purview. Under Canada's Constitution, the federal, provincial and territorial governments have specific roles in the care and governance of public forests. They also share responsibility for such matters as environmental regulation and science and technology.

The 10 provinces and three territories have legislative authority over the conservation and management of forest resources. They develop and enforce policies, legislation and regulations, allocate timber licences, collect forest management fees and gather data. The federal government is responsible for matters related to the national economy, trade and international investments, federal lands and parks, and Aboriginal peoples. About 80 percent of the harvesting that takes place in Canada occurs on public land, predominantly on provincial/territorial lands.

The federal/provincial/territorial forestry relationship is one of coordination, cooperation and partnership. The Canadian Council of Forest Ministers (CCFM) serves as an important coordinating instrument. The CCFM led the development of the first three national forest strategies, beginning in 1992. It continues to be the driving force behind important initiatives such as the National Forest Information System, National Forest Inventory, Canadian Wildland Fire Strategy, and Criteria and Indicators of Sustainable Forest Management.

Forest companies share in the responsibility for managing public forests. Companies with long-term forest licences pay harvesting fees to provincial or territorial governments, and produce plans to carry out sustainable management in return for their access to timber resources. These management plans must be submitted to the government for approval before harvesting can take place. The plans detail how forest values will be conserved, and identify on a map the areas to be harvested. The plans are updated regularly.



Aboriginal peoples' involvement in sustainable forest management is increasing, shaped by a combination of self-government agreements, land claim treaties, court rulings and government policies and practices. These processes and agreements recognize the historical and fundamental connection of Aboriginal peoples to forest ecosystems.

More than 70% of Canada's forests and other wooded land has never been harvested and 40% has been deemed non-commercial or wilderness.

FOREST HEALTH

A healthy forest is generally considered one that has the capacity to maintain its ecological functions while meeting the needs of society. These ecological functions include moderating climate, filtering air and water, enriching the soil and preventing soil erosion, providing a home for wildlife and regulating water flow. The needs are the values, products and services that society seeks from its forests.

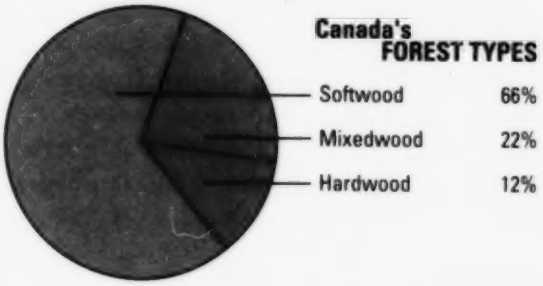
Several factors, both natural and human, affect forest health. Natural factors include fire, insects and disease; human factors include tree harvesting, mining and other economic pursuits, and atmospheric changes such as climate change and acid rain. Both natural and human factors can affect the forest in positive and negative ways.

A key measure of forest health is biodiversity. Other measures include the resilience (or self-maintenance) of the forest, its capacity to provide habitat for indigenous wildlife, its aesthetic appeal and the sustainability of its resources, including trees and non-timber forest products.

Biodiversity

About two-thirds of Canada's estimated 140 000 species of plants, animals and micro-organisms live in the forest. This includes some 180 species of trees. The major tree species are coniferous/softwood (for instance, spruce, pine, fir) and deciduous/hardwood (for example, poplar, birch, maple).

As a signatory to the United Nations Convention on Biological Diversity, Canada has developed a national strategy and action plan to conserve and sustainably use its biological diversity. The Canadian Biodiversity Strategy has been ratified by all territorial and provincial governments. It stresses the need to understand the current status and any changes to species and their populations, in order to develop an approach to conserve and sustain them. Partners under Canada's National Forest Strategy—industry, environmental organizations, Aboriginal peoples, hunters, governments and others—are also committed to maintaining and restoring forest biodiversity.



The Committee on the Status of Endangered Wildlife in Canada (COSEWIC), an independent committee of wildlife experts and scientists, uses a scientific process to assess the risk of extinction for wildlife species. It meets annually to review status reports on species suspected of being at risk and provides assessments to government and the public. Of the 467 species designated by COSEWIC, 305 (65 percent) are forest-associated and 219 of these are protected under the national *Species at Risk Act* (January 2005).

Protected areas

Federal, provincial and territorial governments set aside protected areas to help conserve biodiversity. A growing network of national and provincial parks, and other protected areas and special management areas, can be found in Canada's forests. About eight percent of Canada's forest is legally protected from resource development. Much more forest land—about 40 percent of the total forest land base—is subject to varying degrees of protection through processes such as integrated land-use planning or defined management areas such as certified forests.

Disturbance agents

Natural disturbances such as fire, wind, snow, insects and fungi are an important and necessary part of forest health. They remove old or otherwise susceptible trees, recycle nutrients and provide habitat and food for wildlife. They can, however, have serious economic repercussions if they become severe. For example, by 2005, the mountain pine beetle infestation in British Columbia had affected 8.7 million hectares in that province. Beetle outbreaks are also increasingly frequent in Alberta's pine forests. Altogether, on a national scale, the forest area defoliated by insects and beetle-killed trees totalled 13.1 million hectares in 2004. In 2005, some 7438 fires burned 1.7 million hectares of forest.

Tree harvesting

Tree harvesting is strictly controlled by provincial and territorial regulations, and all harvested areas must be reforested. Each province and territory sets an annual allowable cut based on the sustainable growth rate of the particular forest area, with the goal of maintaining biological diversity while considering economic and social factors. About one third of one percent of Canada's commercial forest is harvested (0.9 million hectares). This compares with an average 2.4 million hectares damaged per year by fire, insects and disease over the past 10 years. Of the 0.9 million hectares of forest harvested each year, 53 percent is regenerated naturally, 43 percent is replanted and four percent is direct-seeded.

Forest certification

Third-party certification is a market-based instrument aimed at promoting sustainable forest management that takes into account environmental, economic and social matters. Canada has the world's largest area of certified forest and produces more fibre originating from certified woodlands than any other country. As of June 2006, some 120 million hectares of forest were certified under one or more of the three forest-specific certification systems available in Canada—Canadian Standards Association, Forest Stewardship Council and Sustainable Forestry Initiative. To put this into perspective, the amount of forest land certified as being sustainably managed equals an area twice the size of France. All standards used in Canada engage Aboriginal peoples and local communities and, for greater transparency, require annual audits and public disclosure of assessment reports.

FOREST SECTOR—ENVIRONMENTAL TRACK RECORD

- New operational harvesting techniques have reduced industry's ecological footprint in the forest
- Pulp and paper mills have greatly reduced their greenhouse gas emissions—30% below 1990 levels
- Industry has virtually eliminated chlorinated dioxins
- Since 1989, industry has spent $2.6 billion on recycling
- Canadian mills recycled almost 5 million tonnes of paper into new products in 2005
- Canada provides 25% of fibre supply for new paper derived from recycled material and 56% from chips and sawmill residues
- Today, 58% of the pulp and paper sector's energy consumption comes from biomass, a renewable resource

FOREST INDUSTRY

The products and economic benefits that flow from the forest industry are an integral part of our daily lives and the national economy.

Economic benefits

In 2005, the forest industry contributed 2.9 percent to Canada's gross domestic product. It is especially important in the more than 300 rural and remote communities that depend on the forest industry for at least 50 percent of their income. In 2005, the forest industry was worth $80.3 billion (estimated shipments) and contributed $31.9 billion to Canada's trade balance. It employs 864 000 people—339 900 in direct jobs (2.1 percent of Canada's total employment) and 524 100 in indirect and induced jobs. The direct jobs are spread across the country but are located primarily in Quebec (112 900), British Columbia (79 700) and Ontario (84 500).

Forest products

The forest industry produces a range of products such as dimensional lumber, wood pulp, paper and value-added products, and helps to support a variety of service-based industries. Canada is the world's largest exporter of forest products, accounting for 17.3 percent of the world trade. The major contributors are softwood lumber, newsprint and wood pulp. In 2005, the total value of Canadian forest-product exports was $41.9 billion. British Columbia accounted for $13.7 billion (33 percent); Quebec, $11.6 billion (28 percent); Ontario, $8.4 billion (20 percent); and other provinces, $8.2 billion (20 percent). The United States is by far Canada's biggest market for forest products. In 2005, it accounted for $33.8 billion of Canada's forest exports, followed by the European Union ($2.3 billion), Japan ($1.9 billion) and China ($1.0 billion). The forest also provides non-timber forest products such as maple sap, wild berries and medicines. Non-timber products and value-added products make up an increasing share of Canada's forest exports and are a growing part of the forest sector's economic future.

CANADA'S RANKING AS A FOREST PRODUCTS NATION

COMMODITIES	WORLD PRODUCTION*	EXPORTS 2004 (Billion dollars)
Total forest products	—	44.6 (100%)
Softwood lumber	Second (19.0%)	11.0 (24.7%)
Newsprint	First (21.5%)	5.3 (11.9%)
Wood pulp	Second (15.2%)	7.1 (16.0%)
Other	—	21.1 (47.4%)

*Food and Agriculture Organization of the United Nations ranking for 2004.

OUR PAST, PRESENT AND FUTURE

The contribution of Canada's forests to the country's economy, environment and social well-being is significant. Our forests form an important part of our roots as a nation and a big part of our future. Taking care of them, and ensuring their ongoing health, is a key priority. More details on the economic aspects of the forest industry are presented in "Forestry Statistics and Trends".

Year in REVIEW

The year 2005–2006 saw important advances in forest management as governments pursued a balance between the forest's environmental, economic and social benefits. The quest for information such as national inventories and the reporting of information gained momentum, as did steps to reduce the risks of natural disturbances, particularly insect pests. Several new protected areas were established to help conserve forest biodiversity. Partnerships and collaboration continued to be key in garnering knowledge, managing activities and sharing information. Economic matters were paramount as governments took steps to help the industry adjust to changes such as the strengthened Canadian dollar, rising costs and increased competition. The International Model Forest Network expanded and an international dialogue took place in Vancouver.

FOREST MANAGEMENT

During 2005–2006, provinces directed their efforts toward forest management to foster the social, environmental and economic well-being of Canadians.

On June 1, 2005, the government of **Prince Edward Island** tabled the Public Forest Council's report entitled *Woodlands Hold Our Island Together*. The policy document will help the government determine its role in the management and conservation of the province's public and private forests.

Prince Edward Island and **New Brunswick** developed policies and procedures for harvesting ground hemlock *(Taxus canadensis)* from Crown land. In New Brunswick alone, an estimated one million pounds of sustainable biomass will be available from Crown lands each year. The first allocations are expected to be made early in 2006 and harvest licences will be issued shortly after. The evergreen shrub is used to produce paclitaxel, a powerful anti-cancer drug.

In June 2005, the **New Brunswick** government announced its response to the 25 recommendations of the Legislature's Select Committee on Wood Supply. The government's action plan includes maintaining the current wood supply in the short term and increasing it in the long term; establishing a public participation process by 2009; establishing a provincial advisory committee; creating a task force to develop strategies for future management regimes for the Crown forest; securing funding for silviculture on public land; and reducing clearcuts on Crown lands.

In 2005, the **Quebec** government began implementing recommendations of the Commission for the Study of Public Forest Management in Quebec (Coulombe Commission). Some $205 million over three years was allocated to improve forest management and integrated forest resource management; facilitate consolidation of the forest sector and minimize the impacts of the lower wood allocations on mills; and to provide tax credits to expand the secondary wood processing industry. Bill 94 was adopted on June 15, 2005, creating the position of chief forester, and Pierre Levac was appointed to the role in December. The government also invested in forestry job creation, silviculture and the modernization of forest management. In January 2006, Quebec established a 17-member council to advise the Minister of Natural Resources and Wildlife on the implementation status of the Coulombe report recommendations.

Quebec implemented 26 special management plans on approximately 355 000 hectares, including lands used mainly by Aboriginal communities, to salvage wood burned in the forest fires of 2005. Contract recipients harvested some 5.7 million cubic metres in 2005–2006 in the regions affected by the forest fires. Similar action was taken in the **Yukon**. Following the 2004 record-breaking year for forest fires in the territory, the government awarded a permit to a Watson Lake company to harvest 340 000 cubic metres of fire-salvaged timber over the next 10 years in the Barney Lake and False Canyon Creek areas.

In 2005, in response to management challenges in Alberta's boreal forest, five **Alberta** government

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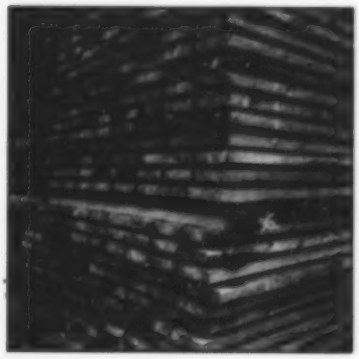
departments cooperated in the preparation of a Province of Alberta Boreal Forest Framework. The framework consists of guiding principles developed to help meet today's boreal forest challenges. Alberta also initiated development of a land-use framework for the effective management of competing land uses.

British Columbia announced land-use decisions for the 6.4 million hectares of the combined Central Coast and North Coast Land and Resource Management Plan areas—a piece of land more than twice the size of Belgium. Key elements include 1.8 million hectares of protected areas (which will raise the provincial total to 13.8 percent and protect habitat for the rare Kermode bear), adoption of ecosystem-based management (EBM) and a new level of government-to-government cooperation between the province and First Nations. EBM is expected to be fully implemented in these areas by 2009.



The **Canadian Wildland Fire Strategy Declaration** was officially launched by the Canadian Council of Forest Ministers in October 2005. The Declaration presents a shared vision and common principles that emphasize the use of risk management and hazard mitigation, enhanced public safety, forest protection and the effective use of funds in managing fires. It also emphasizes a stronger fire suppression organization, as well as prevention, preparedness and recovery activities, and recognizes the role of fire in rejuvenating forests.

FOREST INFORMATION

Governments were busy implementing initiatives and communicating information to help achieve sustainable forest management.

New Brunswick's first *State of the Forest* report was tabled in the Legislature on December 21, 2005. The report provides information about the province's forests, forest industry, natural disturbances, protected areas and other aspects of the forest.

In June 2005, **Manitoba** released the *2005 Provincial Sustainability Report for Manitoba*, the first to be issued under *The Sustainable Development Act*. The report presents indicators divided into 19 categories in the areas of natural environment, economy and social well-being. The two indicators pertaining to forests—forest type and age class, and forest renewal—are shown as "stable".

Saskatchewan released its 2005 *State of the Environment Report* in April 2005. The report takes a new approach, using environmental indicators to measure the health and state of the environment. The indicators fall into three categories—stress indicators, condition indicators and response indicators.

The government of the **Northwest Territories** completed a pilot project to assess the value of 1:40 000 kinematic photography to create base maps and forest vegetation inventory maps. The new type of map was found to be considerably less expensive than the more conventional 1:20 000-scale photographs. In a separate initiative, the Northwest Territories, Natural Resources Canada and the Canadian Space Agency, through the Earth Observation for Sustainable Development of Forests project, completed about 2000 satellite land-cover maps of the territory. The territorial government and Natural Resources Canada also partnered to assess the potential for using 2.5m resolution multispectral satellite imagery as a sampling tool to obtain stand structure estimates of height, crown closure, volume and biomass that could be scaled to Landsat Thematic Mapper images.

The **National Round Table on the Environment and the Economy** released *Boreal Futures: Governance, Conservation and Development in Canada's Boreal* in October 2005. The report is based on the work and research of federal and provincial governments, major resource industry sectors, Aboriginal peoples, non-governmental organizations and academia. It includes an assessment of the state of the boreal

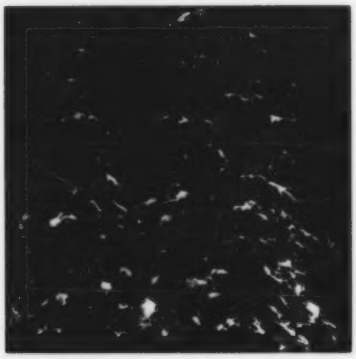
region and proposes recommendations for achieving the region's sustainability.

PARTNERSHIPS AND COLLABORATION

Stakeholder relationships were important in harnessing the collective capabilities and expertise of Canada's forest sector.

A Memorandum of Understanding between **Manitoba** and **Ducks Unlimited Canada** took effect on December 14, 2005. The agreement will guide their collaborative efforts to conserve, protect and promote habitat stewardship for the conservation of biodiversity.

The Alberta-Forintek Alliance, a five-year partnership between **Alberta**, **Forintek Canada Corp.** and **Western Economic Diversification Canada**, was established in 2005 to identify and undertake initiatives to increase the value of the province's forest products.



The **Yukon** joined the membership of Forintek Canada Corp. The four-year partnership agreement allows the territory to participate in the planning and revision of Forintek's National Research Program and share in the research results.

Forest Research Opportunity B.C.—a partnership between the federal and British Columbia governments, as well as the forest industry and universities in that province—began operations on June 1, 2005. The partnership was established to enhance innovation in the forest sector and build relationships among governments, industry and universities.

A second research partnership, formed in January 2005, is **science enterprise Algoma** (seA). Headquartered in Sault Ste. Marie, Ontario, seA focuses on science-based economic development and commercialization. It is involved in bioproducts and bioenergy commercialization activities through its membership in the Northern Ontario Commercialization Initiative. It is also developing proposals for an Alien Invasive Species Management Centre and a Centre for Excellence in Forest Innovation. These initiatives are currently at the early concept stage; when they are more fully developed, they will be presented to various levels of government for consideration.

In April 2005, to promote closer links between Canada and Russia in general and on forest issues in particular, the Canadian Forest Service of Natural Resources Canada and the Russian Federal Forest Agency signed a three-year **Statement of Cooperation**. Under the agreement, the two forest services will collaborate in a number of technical and policy areas, including forest fire management, forest certification and the boreal forest.

NATURAL DISTURBANCES

Governments pursued their commitment to develop prevention, detection, response and management systems to address natural disturbances.

Nova Scotia and the Canadian Forest Service of **Natural Resources Canada** conducted an experimental spray trial to address the concentrations of blackheaded budworm in the Cape Breton Highlands. Up to 5000 hectares in 20 areas in the Highlands were identified for the spray trial to determine the effectiveness of a biological control product on the blackheaded budworm. They have also signed an agreement to undertake a research program to better understand the insect and potential avenues of control.

In **Manitoba**, the eastern spruce budworm infested about 65 550 hectares in 2005. Aerial application of Mimic (tebufenozide) was conducted on 21 756 hectares in northwestern Manitoba. Mimic is a control agent which disrupts the molting process in spruce budworm and related caterpillars. When the caterpillar eats the material, it stops feeding, undergoes an incomplete molt and dies as a

partially molted larva. The aerial application proved effective in suppressing the budworm population and protecting foliage. Jack pine budworm populations in the province remained low.

Manitoba experienced several severe wind events in 2005 resulting in large areas of forest being blown down. The pine forest surrounding the community of Sandilands was one of the hardest hit with more than 800 hectares being damaged. Local community leaders, timber operators and Manitoba Conservation worked together to quickly develop a plan that not only resulted in much of the damaged timber being utilized but also protected the community from a potentially dangerous fire hazard.

British Columbia continued to battle the mountain pine beetle epidemic and develop strategies to mitigate its impact. In September 2005, the province released its Mountain Pine Beetle Emergency Response: Canada-B.C. Implementation Strategy, a three-year business plan for the $100 million contributed by the federal government to mitigate the effects of the infestation. In addition to its Mountain Pine Beetle Action Plan, the province will invest in developing new uses and new markets for the affected wood; increase the annual cut in the south-central area; award licences to companies in local communities; and assist communities in the north-central interior in reducing the economic impacts of the epidemic.

In October 2005, **British Columbia** launched the Invasive Alien Plants Program, a web-based tool to help battle invasive alien plants. The application enables users to produce maps showing the location of species of invasive plants in British Columbia.

CONSERVATION AND PROTECTION

Provinces made advances in conserving and protecting natural areas to help maintain biodiversity.

The results of the **Nova Scotia** 2005 Sanctuary and Wildlife Management Area public review were released in February 2006. The report revealed that the province's residents are concerned about their 26 sanctuaries and want more wildlife areas. In response, the government started work on developing regulations to establish new areas and reviewing the existing regulations for improved habitat protection. The government will also continue working toward completing its comprehensive system of protected areas.

The government of **Nova Scotia** and Nova Scotia Nature Trust signed the Lands and Legacies Conservation Partnership in 2005. The agreement enables the province to give Nature Trust $300,000 over a three-year period; in return, the Trust will transfer to the province lands with an appraised market value of no less than $300,000. The transferred lands will be private lands located within areas designated, or proposed to be designated, under the *Wilderness Areas Protection Act* and the *Special Places Protection Act* or similar conservation legislation. The Trust will also buy land or work with private landowners to secure donations of land and conservation easements. As part of the agreement, the organization will provide land management and education programs to private landowners.

In 2005, **New Brunswick** set up local, provincial and scientific advisory committees for its 10 large and 20 small protected areas, which cover more than 150 000 hectares of land. The committees provide advice, help develop management plans for the protected areas, and help to ensure that biodiversity is preserved and that conflicts among users are minimized. Discussions began with several individuals and conservation groups that own land regarding the possible inclusion of their lands under the *Protected Natural Areas Act*.

In 2005, the **Quebec** government added 22 new areas to its protected areas network and classified 41 new sectors as exceptional forest ecosystems. The new protected areas are spread over approximately 700 000 hectares of the boreal forest and bring the province's protected areas network to 5.8 percent (its target is eight percent by 2008). The new exceptional forest ecosystems cover 11 300 hectares and include 20 old-growth forests, 10 rare forests and 11 shelter forests for threatened or vulnerable species. The province now has a total of 104 exceptional forest ecosystems covering 19 400 hectares classified under its *Forest Act*.

In June 2005, **Ontario** released *Protecting What Sustains Us: Ontario's Biodiversity Strategy 2005*, the province's plan to conserve its plants, animals and ecosystems. Implementation of the plan will be coordinated by a 21-member biodiversity council. Contributing to the strategy is *The Great Lakes Conservation Blueprint for Biodiversity*, released in November 2005. The blueprint documents the results of a computer-based analysis of specific areas in Ontario's Great Lakes region that, if conserved, could sustain essential elements of the region's biodiversity.

Photo: Weyerhaeuser

Ontario protected three more plant species under the *Endangered Species Act* and expanded the protected area of a fourth. The three new regulated plants are the Bird's-foot Violet, Red Mulberry and Spoon-leaved Moss, and the Cucumber Tree is now protected throughout the province as opposed to the previous eight areas. There are now 43 plant and animal species regulated under Ontario's *Endangered Species Act*.

Ontario also prohibited the hunting of white-coloured moose in Wildlife Management Units near Timmins. White-coloured moose are naturally produced in wild moose populations, apparently due to a recessive gene, and are not a separate species. The regulation under the *Fish and Wildlife Conservation Act* recognizes the cultural and spiritual significance of white moose to First Nations, and promotes local eco-tourism.

Ontario added 45 parks and conservation reserves to its protected areas system. The new areas encompass 500 000 hectares.

Manitoba announced three new ecological reserves in 2005—Brokenhead Wetland (563 hectares), Armit Meadows (263 hectares) and Birch River (183 hectares). Ecological reserves carry the highest level of protection in the province.

ABORIGINAL INVOLVEMENT

Initiatives were put in place to improve the economic and social well-being of Aboriginal peoples.

Ontario provided a one-time $2 million grant to the Forestry Futures Trust to help eligible First Nations in the far north carry out land-use planning and identify forestry-based economic opportunities.

Swampy Cree Tribal Council (SCTC) and **Manitoba** signed a Memorandum of Understanding on August 3, 2005, agreeing that, for the next five years, Manitoba will grant long-term hardwood tenure in northwest Manitoba only to SCTC or to a company with which SCTC has a long-term partnership.

The **British Columbia** Ministry of Forests and Range signed additional forestry agreements with First Nations providing them with access to timber and a share of forestry revenues. Since 2002, the government has signed agreements with 110 First Nations, providing access to about 18.4 million cubic metres of timber and sharing more than $131 million in forestry revenue.

ECONOMIC ISSUES

Some provinces established mechanisms to encourage sustainable economic development opportunities in the forest industry.

In 2005, the government of **Newfoundland and Labrador** received the final report on the potential for secondary manufacturing and value-added wood products development in Labrador. The study provides valuable information on resource availability and quality, mill operations, financing, product markets, disposition of mill residues, local social and economic issues, and development of local expertise.

Also in **Newfoundland and Labrador**, the 2006 Island Wood Supply Analysis was completed. The analysis was used to establish the annual allowable cut for the island portion of the province for the period 2006 to 2010.

Like the industry across much of Canada, **Nova Scotia**'s forest industry continued to experience financial stress, largely due to external factors such as changes in the exchange rate of the Canadian dollar, energy costs, market prices and excess industry capacity. Shut-downs in adjoining provinces greatly disrupted regional markets for timber, especially hardwood and pulpwood. The timber harvest for calendar year 2005 declined by nine percent from the prior year.

On December 23, 2005, **New Brunswick**'s Premier announced a $250-million action plan to assist the province's forest industry. The five-year plan addresses wood supply objectives; pulpwood stumpage rates; increased funding for silviculture; a biomass strategy; partnerships with industry to compete in the global marketplace; transportation; taxation; and human resource development.

In 2006, **Quebec** introduced measures and an allocation of $17 million over three years to assist the forest industry. The measures focus on assistance for specialized studies; financial assistance for the development of technologies and products; diagnostics for hardwood sawmills and furniture plants; and creation of a network of regional technology transfer agents.

Quebec's forest industry lost 3329 jobs—1565 of which were temporary—due to factors such as the stronger Canadian dollar; rising energy costs; reduced demand, particularly for paper products and furniture panels; and competition from overseas markets. Included in this tally are 564 job losses in the province's mills resulting from reduced allocations in the province's public forests (this includes 350 positions temporarily eliminated). Employment in the wood products, pulp, paper and furniture sectors was 104 400.

Following the release of the final report of the Council on Forest Sector Competitiveness, the **Ontario** government announced several initiatives to strengthen the province's forest industry. Among the measures are $900 million over four years to enhance the industry's competitiveness and to encourage re-investment and new investment. The government also announced additional funding to enhance the Ontario forest resource inventory and establish the Ontario Wood Promotion program; invest in job creation in northern Ontario; create a process to maximize wood use and reduce costs; streamline approvals for forest activities and combine forest management units; and establish a panel of council members to assist in monitoring the actions.

The Atlantic Master Logger Certification Program is a new program that provides third-party verification of the sustainable harvesting practices of contractors in **Atlantic Canada**. Of the 19 logging companies that took part in the program's pilot phase, 13 were successful in attaining certification. One major paper buyer has announced it endorses the program, which means that wood harvested by Atlantic Master Loggers will contribute to targets for certified wood.

In August 2005, a NAFTA Extraordinary Challenge Committee (ECC) rejected U.S. arguments that the original NAFTA Panel in the **softwood lumber** injury case had overstepped its authority and that one of the panellists was in conflict of interest. The original panel had ruled that the U.S. International Trade Commission had no basis for determining that softwood lumber from Canada posed a threat of material injury to the U.S. industry, which is a legal requirement to impose countervailing or antidumping duties against imports. While Canada's view was that the United States was now obligated to revoke the duty orders and return all deposits collected to date (approximately US$5 billion), the U.S. argued that it still had the authority to continue duty collection. In September 2005, Canada launched a challenge against the U.S. failure to abide by the ECC ruling before the U.S. Court of International Trade, seeking revocation of the duties and a full refund of deposits with interest.

In December 2005, the U.S. Department of Commerce published the final results of its second administrative review of the antidumping and countervailing duty orders, which covered the year 2003–2004. The results determined a new countervailing duty rate of 8.7 percent (down from the first administrative review rate of 16.37 percent) and a new "all others" antidumping duty rate of 2.11 percent (down from the current 3.78 percent). This reduced the combined duties for Canadian softwood lumber exports to the U.S. for that period from 20.15 percent to 10.81 percent, in part due to successful legal challenges to U.S. subsidy and dumping calculations.

In February 2006, Canada filed a complaint under NAFTA concerning the final results of the U.S. first administrative review of the countervailing duty order, which imposed a tariff of 16.37 percent on softwood lumber imports from Canada. The first review addressed the year 2002–2003.

On April 27, 2006, Canada and the U.S. reached a framework agreement outlining the broad terms of a negotiated settlement to the softwood lumber dispute. The framework calls for the U.S. to revoke the countervailing and antidumping duty orders and to return 80 percent of duties paid to date to Canadian lumber companies, in exchange for Canada imposing an export tax and volume restraints on certain softwood lumber shipments to the U.S. On July 1, the Prime Minister announced that Canada and the U.S. had finalized the terms of the agreeement and that the government would be presenting enabling legislation to the House of Commons at the fall session of Parliament.

Photo: Paprican

INNOVATION

There was a continued effort to focus on innovation and technology development to remain competitive and to meet the evolving expectations of forest stewardship.

The 80-year-old **Ontario** Tree Seed plant was upgraded in 2005 with a single, more efficient facility—one of the first government buildings in Ontario built to stringent energy and ecological standards—replacing three aging administration buildings. The plant collects and stores seeds that contain the genetic diversity found in Ontario's forests. The government expects to save about 60 percent in energy costs due to the conservation measures.

The **Carbon Budget Model** was made available to the public in 2005 via the Internet. The computer model helps forest managers to estimate the amount of carbon stored in forests and assess the impact of forest operations on forest carbon stocks. The tool was developed by the Canadian Forest Service of Natural Resources Canada in collaboration with the Canadian Model Forest Network. It is expected to

increase the potential for forests and forest management activities to contribute to a strategy for reducing greenhouse gas emissions.

ENVIRONMENT

The important role of forests in maintaining a healthy environment was again recognized.

In 2005, **Prince Edward Island**'s Department of Environment, Energy and Forestry conducted two climate change projects. The first project was a survey to determine which non-native trees and shrubs have been successfully planted in the province. The information will be used to determine if climate change may make Prince Edward Island hospitable for more southerly species. The second project looked at tree rooting depth to determine how far down the roots of Acadian forest species can reach in order to access water. The study found that on two Island soil types, maples, birches and white spruce were able to access deep water sources, which means these species may be able to withstand periods of drought better than previously thought.

In **Nunavut**, the *Wildlife Act* came into force on July 9, 2005. The Act follows three years of public consultation and reflects Inuit rights. Under the new legislation, all trees and plants are wildlife and, as such, their management, harvest and protection are regulated by the *Wildlife Act*.

The government of the **Northwest Territories** began a multi-year program to develop a consistent ecosystem-based regional and landscape-level classification to meet its planning and management needs in the areas of wildlife, forestry, environmental assessment and protected areas. In 2005, the Taiga Plains Ecozone, the ecological zone representing the sedimentary plains of the Mackenzie Valley, was mapped. Similar ecosystem classification work will be completed for the eastern (Precambrian Shield) portion of the Northwest Territories in 2007 and for the mountain areas in the west by 2009.

In December 2005, the **Forest Products Association of Canada** and **The Climate Group** signed a Memorandum of Understanding to mitigate climate change and promote sustainable development. The two organizations will cooperate on opportunities to mitigate greenhouse gas emissions and improve industry competitiveness. The Climate Group is an independent, non-profit organization dedicated to advancing business and government leadership on climate change.

INTERNATIONAL ACTIVITIES

Canada continued its involvement at the international level to enhance cooperation and coordination on forest issues and to increase market access.

Four new model forests joined the **International Model Forest Network** in 2005—Brazil's Mata Atlantica Model Forest and Pandeiros Model Forest; Bolivia's Chiquitano Model Forest; and India's Kodagu Model Forest. The network now has 38 model forests around the world.

More than 700 delegates from 25 countries attended Global Forest and Paper Industry Summit 2005, the first meeting of its kind organized by the **Forest Products Association of Canada**, in Vancouver.

Forestry STATISTICS AND TRENDS

The following sections "Profiles Across the Nation" and "Statistical Trends" depict Canada's forest resources and industry from a statistical and numerical perspective.

The data are derived primarily from Statistics Canada, Environment Canada, the Forest Products Association of Canada, the Pulp and Paper Products Council, the Canadian Forest Service of Natural Resources Canada, the National Forestry Database and the Canadian Interagency Forest Fire Centre. Where necessary, the data have been edited for accuracy and consistency. All data are subject to revision.

In most cases, the data represent the year before the reporting period. However, when the data are gathered from several sources, it takes longer to analyse and produce them; in these cases, the numbers reflect results from two or three years before the reporting period.

While most of the figures are calculated for the calendar year, some are based on the federal government's fiscal year (April 1 to March 31). Numbers are rounded off; in the case of employment data, they are rounded to the nearest hundred.

It may not be possible to accurately compare the data from the various sections with each other, as they emanate from several sources and these sources may gather and calculate their statistics differently.

PROFILES Across the Nation

CANADA

Population (2005)
32.3 million

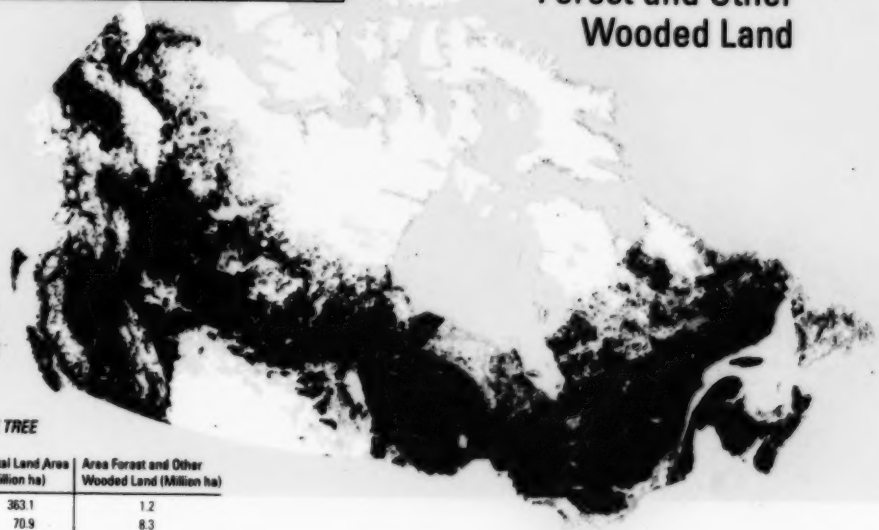
Land area
979.1 million ha

Forest and other wooded land
402.1 million ha

National parks (2004)
26.5 million ha

Park attendance (2004–2005)
12.3 million person-visits

MAPLE TREE



% Forest and Other Wooded Land	Total Land Area (Million ha)	Area Forest and Other Wooded Land (Million ha)
0-<5	363.1	1.2
5-<20	70.9	8.3
20-<40	74.0	22.3
40-<60	83.0	41.7
60-<80	121.8	86.9
80-100	266.3	241.7
Total	979.1	402.1

RESOURCES	
Ownership (2005)	
Provincial	77%
Federal	16%
Private	7%
Forest type (2005)	
Softwood	66%
Hardwood	12%
Mixedwood	22%
Wood supply (2004)[a]	245.9 million m^3
Harvest (volume)–Industrial roundwood (2004)[b]	205.6 million m^3
Harvest (area)–Industrial roundwood (2004)	840 448 ha
Area planted (2004)	362 036 ha
Area seeded (2004)	20 434 ha
Area defoliated by insects and beetle-killed trees (2004)[c]	13.1 million ha
Number of fires (2005)[d]	7438
Area burned (2005)[d]	1.7 million ha

MAJOR VALUE-ADDED WOOD PRODUCTS	
Revenue from goods manufactured (2004)[e]	$4.9 billion
Doors and windows	$1.8 billion
Framing products	$1.2 billion
Prefabricated buildings	$717.1 million
Mobile homes	$385.4 million
Other products	$881.0 million

NON-TIMBER FOREST PRODUCTS		
Production	Value	Quantity
Maple products (2004)*	$152.9 million	26.9 million litres
Christmas trees (2004)*	$62.2 million	3.9 million
Wildlife pelts (minus sealskins)** (2003)	$25.6 milion	902 000

INDUSTRY	
Value of exports (2005)	$41.9 billion
Softwood lumber	23.7%
Newsprint	12.6%
Wood pulp	14.9%
Wood panels (waferboard, plywood, fibreboard, veneer, particleboard)	12.4%
Other paper and paperboard	17.2%
Converted paper	2.2%
Other products	16.9%
Major export markets (2005)	$41.9 billion
United States	80.8%
European Union	5.5%
Japan	4.4%
China	2.4%
South and Central America	1.4%
Other countries	5.5%
Balance of trade (2005)	$31.9 billion
Contribution to GDP (2005)***	$37.6 billion
Revenue from goods manufactured (2004)[e]	$81.8 billion
Exported	54.5%
Sold domestically	45.5%
Direct jobs (2005)	339 900
Indirect and induced jobs (2005)	524 100
Wages and salaries (2004)[e]	$12.4 billion
Logging (2004)	$2.1 billion
Wood product manufacturing (2004)	$5.2 billion
Paper manufacturing (2004)	$5.2 billion
New investments (2005)	$3.4 billion
Forest area certified (2005)[f]	119.8 million ha

a, b, c, d, e, f see page 26.

* Based on estimates.

** Numbers for sealskins are estimates based on the last five years' data.

*** Current dollars.

British Columbia

Population (2005)
4.3 million
Land area
94.55 million ha
Forest and other wooded land
64.25 million ha
Provincial parks
10.3 million ha

WESTERN RED CEDAR

RESOURCES	
Ownership (2005)	
Provincial	96%
Federal	1%
Private	3%
Forest type (2005)	
Softwood	82%
Hardwood	5%
Mixedwood	13%
Wood supply (2004)[a]	82.6 million m^3
Harvest (volume)–Industrial roundwood (2004)[b]	87.0 million m^3
Harvest (area)–Industrial roundwood (2004)	174 101 ha
Area planted (2004)	155 806 ha
Area seeded (2004)	not available
Area defoliated by insects and beetle-killed trees (2004)[c]	10.3 million ha
Number of fires (2005)[d]	970
Area burned (2005)[d]	35 091 ha

INDUSTRY	
Value of exports (2005)	$13.7 billion
Softwood lumber	45.7%
Newsprint	4.5%
Wood pulp	18.8%
Wood panels (waferboard, plywood, fibreboard, veneer, particleboard)	8.8%
Other paper and paperboard	8.9%
Converted paper	0.2%
Other products	13.1%
Major export markets (2005)	$13.7 billion
United States	68.2%
European Union	6.9%
Japan	11.4%
China	4.8%
South and Central America	1.2%
Other countries	7.5%
Balance of trade (2005)	$12.4 billion
Revenue from goods manufactured (2004)[e]	$24.2 billion
Logging (2004)	$6.2 billion
Wood product manufacturing (2004)	$12.2 billion
Paper manufacturing (2004)	$5.8 billion
Direct jobs (2005)	79 700
Wages and salaries (2004)[e]	$3.5 billion
Logging (2004)	$885.1 million
Wood product manufacturing (2004)	$1.7 billion
Paper manufacturing (2004)	$907.6 million
New investments (2005)	$0.9 billion
Forest area certified (2005)[f]	42.1 million ha

Alberta

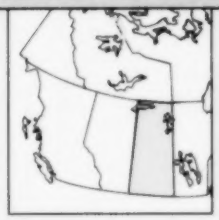
Population (2005)
3.3 million
Land area
65.44 million ha
Forest and other wooded land
36.39 million ha
Provincial parks
212 434 ha

LODGEPOLE PINE

RESOURCES	
Ownership (2005)	
Provincial	89%
Federal	8%
Private	3%
Forest type (2005)	
Softwood	50%
Hardwood	32%
Mixedwood	18%
Wood supply (2004)[a]	24.4 million m^3
Harvest (volume)–Industrial roundwood (2004)[b]	23.5 million m^3
Harvest (area)–Industrial roundwood (2004)	not available
Area planted (2004)	not available
Area seeded (2004)	not available
Area defoliated by insects and beetle-killed trees (2004)[c]	636 939 ha
Number of fires (2005)[d]	1359
Area burned (2005)[d]	60 602 ha

INDUSTRY	
Value of exports (2005)	$3.0 billion
Softwood lumber	20.3%
Newsprint	4.1%
Wood pulp	39.7%
Wood panels (waferboard, plywood, fibreboard, veneer, particleboard)	28.6%
Other paper and paperboard	0.9%
Converted paper	0.7%
Other products	5.6%
Major export markets (2005)	$3.0 billion
United States	77.2%
European Union	4.2%
Japan	6.6%
China	3.7%
South and Central America	0.0%
Other countries	8.3%
Balance of trade (2005)	$2.7 billion
Revenue from goods manufactured (2004)[e]	$6.1 billion
Logging (2004)	$827.6 million
Wood product manufacturing (2004)	$3.6 billion
Paper manufacturing (2004)	$1.6 billion
Direct jobs (2005)	19 200
Wages and salaries (2004)[e]	$885.1 million
Logging (2004)	$160.5 million
Wood product manufacturing (2004)	$518.4 million
Paper manufacturing (2004)	$206.2 million
New investments (2005)	$0.7 billion
Forest area certified (2005)[f]	17.4 million ha

Saskatchewan



Population (2005)
1.0 million
Land area
65.19 million ha
Forest and other wooded land
24.26 million ha
Provincial parks
1.2 million ha

WHITE BIRCH

RESOURCES	
Ownership (2005)	
Provincial	90%
Federal	4%
Private	6%
Forest type (2005)	
Softwood	47%
Hardwood	16%
Mixedwood	37%
Wood supply (2004)[a]	8.2 million m^3
Harvest (volume)–Industrial roundwood (2004)[b]	6.1 million m^3
Harvest (area)–Industrial roundwood (2004)	30 612 ha
Area planted (2004)	15 257 ha
Area seeded (2004)	not available
Area defoliated by insects and beetle-killed trees (2004)[c]	282 376 ha
Number of fires (2005)[d]	322
Area burned (2005)[d]	213 523 ha

INDUSTRY	
Value of exports (2005)	$880.9 million
Softwood lumber	12.0%
Newsprint	0.0%
Wood pulp	28.8%
Wood panels (waferboard, plywood, fibreboard, veneer, particleboard)	37.3%
Other paper and paperboard	18.9%
Converted paper	1.8%
Other products	1.2%
Major export markets (2005)	$880.9 million
United States	80.3%
European Union	9.0%
Japan	2.1%
China	4.6%
South and Central America	0.0%
Other countries	4.0%
Balance of trade (2005)	$811.7 million
Revenue from goods manufactured (2004)[e]	$1.6 billion
Logging (2004)	$262.6 million
Wood product manufacturing (2004)	$672.2 million
Paper manufacturing (2004)	$822.5 million
Direct jobs (2005)	3400
Wages and salaries (2004)[e]	$193.7 million
Logging (2004)	$29.0 million
Wood product manufacturing (2004)	$80.1 million
Paper manufacturing (2004)	$84.6 million
New investments (2005)	not available
Forest area certified (2005)[f]	6.7 million ha

Manitoba

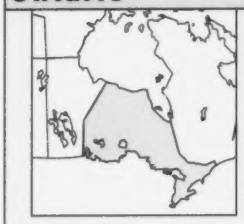
Population (2005)
1.2 million
Land area
63.62 million ha
Forest and other wooded land
36.35 million ha
Provincial parks
3.4 million ha

WHITE SPRUCE

RESOURCES	
Ownership (2005)	
Provincial	95%
Federal	2%
Private	3%
Forest type (2005)	
Softwood	74%
Hardwood	15%
Mixedwood	11%
Wood supply (2004)[a]	9.6 million m^3
Harvest (volume)–Industrial roundwood (2004)[b]	2.1 million m^3
Harvest (area)–Industrial roundwood (2004)	not available
Area planted (2004)	6865 ha
Area seeded (2004)	not available
Area defoliated by insects and beetle-killed trees (2004)[c]	101 931 ha
Number of fires (2005)[d]	246
Area burned (2005)[d]	72 680 ha

INDUSTRY	
Value of exports (2005)	$732.5 million
Softwood lumber	8.5%
Newsprint	15.7%
Wood pulp	0.1%
Wood panels (waferboard, plywood, fibreboard, veneer, particleboard)	24.4%
Other paper and paperboard	13.8%
Converted paper	4.2%
Other products	33.3%
Major export markets (2005)	$732.5 million
United States	96.2%
European Union	1.1%
Japan	0.2%
China	0.1%
South and Central America	0.6%
Other countries	1.8%
Balance of trade (2005)	$344.3 million
Revenue from goods manufactured (2004)[e]	$1.4 billion
Logging (2004)	$119.6 million
Wood product manufacturing (2004)	$717.8 million
Paper manufacturing (2004)	$511.8 million
Direct jobs (2005)	7200
Wages and salaries (2004)[e]	$236.6 million
Logging (2003)	$21.0 million
Wood product manufacturing (2004)	$124.8 million
Paper manufacturing (2004)	$90.8 million
New investments (2005)	not available
Forest area certified (2005)[f]	10.6 million ha

Ontario



Population (2005)
12.5 million
Land area
107.48 million ha
Forest and other wooded land
68.29 million ha
Provincial parks
7.8 million ha

EASTERN WHITE PINE

RESOURCES	
Ownership (2005)	
Provincial	91%
Federal	1%
Private	8%
Forest type (2005)	
Softwood	58%
Hardwood	16%
Mixedwood	26%
Wood supply (2004)[a]	31.5 million m^3
Harvest (volume)–Industrial roundwood (2004)[b]	25.2 million m^3
Harvest (area)–Industrial roundwood (2004)	160 156 ha
Area planted (2004)	84 169 ha
Area seeded (2004)	20 180 ha
Area defoliated by insects and beetle-killed trees (2004)[c]	1.6 million ha
Number of fires (2005)[d]	1961
Area burned (2005)[d]	42 308 ha

INDUSTRY	
Value of exports (2005)	$8.4 billion
Softwood lumber	8.7%
Newsprint	13.4%
Wood pulp	10.1%
Wood panels (waferboard, plywood, fibreboard, veneer, particleboard)	15.4%
Other paper and paperboard	21.7%
Converted paper	6.3%
Other products	24.4%
Major export markets (2005)	$8.4 billion
United States	96.4%
European Union	1.1%
Japan	0.1%
China	0.5%
South and Central America	0.4%
Other countries	1.5%
Balance of trade (2005)	$2.9 billion
Revenue from goods manufactured (2004)[e]	$18.6 billion
Logging (2004)	$2.0 billion
Wood product manufacturing (2004)	$6.1 billion
Paper manufacturing (2004)	$10.5 billion
Direct jobs (2005)	84 500
Wages and salaries (2004)[e]	$3.1 billion
Logging (2004)	$324.7 million
Wood product manufacturing (2004)	$1.0 billion
Paper manufacturing (2004)	$1.8 billion
New investments (2005)	$0.6 billion
Forest area certified (2005)[f]	21.9 million ha

Quebec

Population (2005)
7.6 million
Land area
151.89 million ha
Forest and other wooded land
84.58 million ha
Provincial parks
754 600 ha*

YELLOW BIRCH

RESOURCES	
Ownership (2005)	
Provincial	89%
Private	11%
Forest type (2005)	
Softwood	73%
Hardwood	11%
Mixedwood	16%
Wood supply (2004)[a]	54.5 million m^3
Harvest (volume)–Industrial roundwood (2004)[b]	43.3 million m^3
Harvest (area)–Industrial roundwood (2004)	335 792 ha
Area planted (2004)	70 086 ha
Area seeded (2004)	254 ha
Area defoliated by insects and beetle-killed trees (2004)[c]	31 082 ha
Number of fires (2005)[d]	1374
Area burned (2005)[d]	831 022 ha

INDUSTRY	
Value of exports (2005)	$11.6 billion
Softwood lumber	12.2%
Newsprint	20.3%
Wood pulp	7.6%
Wood panels (waferboard, plywood, fibreboard, veneer, particleboard)	9.9%
Other paper and paperboard	26.7%
Converted paper	2.3%
Other products	20.9%
Major export markets (2005)	$11.6 billion
United States	86.4%
European Union	5.9%
Japan	0.3%
China	1.2%
South and Central America	1.4%
Other countries	4.8%
Balance of trade (2005)	$9.6 billion
Revenue from goods manufactured (2004)[e]	$22.6 billion
Logging (2004)	$2.8 billion
Wood product manufacturing (2004)	$9.2 billion
Paper manufacturing (2004)	$10.6 billion
Direct jobs (2005)	113 000
Wages and salaries (2004)[e]	$3.4 billion
Logging (2004)	$423.4 million
Wood product manufacturing (2004)	$1.4 billion
Paper manufacturing (2004)	$1.6 billion
New investments (2005)	$0.8 billion
Forest area certified (2005)[f]	11.7 million ha

*Wildlife reserves excluded.

New Brunswick

Population (2005)
752 000
Land area
7.31 million ha
Forest and other wooded land
6.21 million ha
Provincial parks
22 084 ha

BALSAM FIR

RESOURCES	
Ownership (2005)	
Provincial	48%
Federal	2%
Private	50%
Forest type (2005)	
Softwood	44%
Hardwood	25%
Mixedwood	31%
Wood supply (2004)[a]	11.4 million m^3
Harvest (volume)–Industrial roundwood (2004)[b]	11.4 million m^3
Harvest (area)–Industrial roundwood (2004)	111 348 ha
Area planted (2004)	22 968 ha
Area seeded (2004)	not available
Area defoliated by insects and beetle-killed trees (2004)[c]	0 ha
Number of fires (2005)[d]	305
Area burned (2005)[d]	355 ha

INDUSTRY	
Value of exports (2005)	$1.9 billion
Softwood lumber	25.1%
Newsprint	7.0%
Wood pulp	15.7%
Wood panels (waferboard, plywood, fibreboard, veneer, particleboard)	8.9%
Other paper and paperboard	23.8%
Converted paper	1.9%
Other products	17.6%
Major export markets (2005)	$1.9 billion
United States	86.3%
European Union	4.3%
Japan	0.4%
China	0.5%
South and Central America	1.2%
Other countries	7.3%
Balance of trade (2005)	$1.7 billion
Revenue from goods manufactured (2004)[e]	$4.9 billion
Logging (2004)	$786.1 million
Wood product manufacturing (2004)	$1.6 billion
Paper manufacturing (2004)	$2.5 billion
Direct jobs (2005)	17 700
Wages and salaries (2004)[e]	$697.5 million
Logging (2004)	$157.7 million
Wood product manufacturing (2004)	$210.0 million
Paper manufacturing (2004)	$329.8 million
New investments (2005)	not available
Forest area certified (2005)[f]	3.9 million ha

Nova Scotia

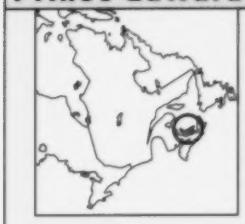
Population (2005)
937 900
Land area
5.53 million ha
Forest and other wooded land
4.35 million ha
Provincial parks
31 000 ha

RED SPRUCE

RESOURCES	
Ownership (2005)	
Provincial	29%
Federal	3%
Private	68%
Forest type (2005)	
Softwood	58%
Hardwood	13%
Mixedwood	29%
Wood supply (2004)[a]	7.7 million m^3
Harvest (volume)–Industrial roundwood (2004)[b]	6.9 million m^3
Harvest (area)–Industrial roundwood (2003)	52 858 ha
Area planted (2004)	not available
Area seeded (2004)	not available
Area defoliated by insects and beetle-killed trees (2004)[c]	not available
Number of fires (2005)[d]	304
Area burned (2005)[d]	517 ha

INDUSTRY	
Value of exports (2005)	$1.0 billion
Softwood lumber	20.3%
Newsprint	26.7%
Wood pulp	16.6%
Wood panels (waferboard, plywood, fibreboard, veneer, particleboard)	2.9%
Other paper and paperboard	28.3%
Converted paper	1.2%
Other products	4.0%
Major export markets (2005)	$1.0 billion
United States	74.0%
European Union	10.7%
Japan	0.1%
China	0.2%
South and Central America	8.0%
Other countries	7.0%
Balance of trade (2005)	$994.4 million
Revenue from goods manufactured (2004)[e]	$1.7 billion
Logging (2004)	$265.4 million
Wood product manufacturing (2004)	$578.7 million
Paper manufacturing (2004)	$886.7 million
Direct jobs (2005)	10 500
Wages and salaries (2004)[e]	$1.0 billion
Logging (2004)	$84.6 million
Wood product manufacturing (2004)	$90.6 million
Paper manufacturing (2004)	$886.7 million
New investments (2005)	not available
Forest area certified (2005)[f]	1.7 million ha

Prince Edward Island



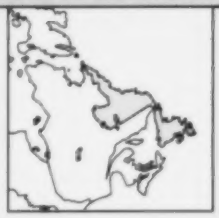
Population (2005)
138 100
Land area
0.58 million ha
Forest and other wooded land
0.27 million ha
Provincial parks
2 100 ha

RED OAK

RESOURCES	
Ownership (2005)	
Provincial	8%
Federal	1%
Private	91%
Forest type (2005)	
Softwood	24%
Hardwood	29%
Mixedwood	47%
Wood supply (2004)[a]	0.5 million m^3
Harvest (volume)–Industrial roundwood (2004)[b]	0.7 million m^3
Harvest (area)–Industrial roundwood (2004)	5495 ha
Area planted (2004)	1040 ha
Area seeded (2004)	not available
Area defoliated by insects and beetle-killed trees (2004)[c]	320
Number of fires (2005)[d]	13
Area burned (2005)[d]	50 ha

INDUSTRY	
Value of exports (2005)	$21.9 million
Softwood lumber	71.1%
Wood panels (waferboard, plywood, fibreboard, veneer, particleboard)	0.8%
Other paper and paperboard	0.7%
Converted paper	22.5%
Other products	5.1%
Major export markets (2005)	$21.9 million
United States	98.0%
European Union	1.0%
South and Central America	0.5%
Other countries	0.5%
Balance of trade (2005)	$21.8 million
Revenue from goods manufactured (2004)[a]	$128.6 million
Logging (2004)	$42.9 million
Wood product manufacturing (2004)	$53.3 million
Paper manufacturing (2004)	$32.4 milion
Direct jobs (2005)	700
Wages and salaries (2004)[a]	$46.0 million
Logging (2004)	$35.0 million
Wood product manufacturing (2004)	$8.0 million
Paper manufacturing (2004)	$3.0 million
New investments (2005)	not available
Forest area certified (2005)[f]	not applicable

Newfoundland and Labrador



Population (2005)
516 000
Land area
40.30 million ha
Forest and other wooded land
20.07 million ha
Provincial parks
20 551 ha

BLACK SPRUCE

RESOURCES	
Ownership (2005)	
Provincial*	99%
Private	1%
Forest type (2005)	
Softwood	93%
Hardwood	1%
Mixedwood	6%
Wood supply (2004)[a]	2.5 million m^3
Harvest (volume)–Industrial roundwood (2004)[b]	2.3 million m^3
Harvest (area)–Industrial roundwood (2004)	22 845 ha
Area planted (2004)	5816 ha
Area seeded (2004)	not available
Area defoliated by insects and beetle-killed trees (2004)[c]	58 384 ha
Number of fires (2005)[d]	145
Area burned (2005)[d]	22 834 ha

INDUSTRY	
Value of exports (2005)	$537.8 million
Softwood lumber	2.2%
Newsprint	94.4%
Wood pulp	0.0%
Wood panels (waferboard, plywood, fibreboard, veneer, particleboard)	0.0%
Other paper and paperboard	3.4%
Converted paper	0.0%
Other products	0.0%
Major export markets (2005)	$537.8 million
United States	29.5%
European Union	37.2%
South and Central America	18.5%
Other countries	14.8%
Balance of trade (2005)	$528.3 million
Revenue from goods manufactured (2004)[a]	$851.7 million
Logging (2004)	$134.1 million
Wood product manufacturing (2004)	$69.3 million
Paper manufacturing (2004)	$448.3 million
Direct jobs (2005)	4300
Wages and salaries (2004)[a]	$110.4 million
Logging (2004)	$22.6 million
Wood product manufacturing (2004)	$12.9 million
Paper manufacturing (2004)	$74.9 million
New investments (2005)	not available
Forest area certified (2005)[f]	3.8 million ha

*Timber and property rights for 69% of the Crown land on the island of Newfoundland have been conveyed to pulp and paper companies through 99-year licences issued under the 1905 *Pulp and Paper Manufacturing Act* and 1935 *Bowater Act*. Therefore, the province's financial and legal system treats this licensed land as private property.

Yukon Territory

Population (2005)
31 000
Land area
48.49 million ha
Forest and other wooded land
22.79 million ha
Territorial parks
not available

SUBALPINE FIR

RESOURCES	
Ownership (2005)	
Federal	100%
Forest type (2005)	
Softwood	79%
Hardwood	2%
Mixedwood	19%
Wood supply (2004)[a]	239 thousand m^3
Harvest (volume)–Industrial roundwood (2004)[b]	26 thousand m^3
Harvest (area)–Industrial roundwood (2004)	48 ha
Area planted (2004)	not available
Area seeded (2004)	not available
Area defoliated by insects and beetle-killed trees (2004)[c]	99 630 ha
Number of fires (2005)[d]	83
Area burned (2005)[d]	170 691 ha

INDUSTRY	
Value of exports (2005)	$904 952
Softwood lumber	0%
Other products	100%
Major export markets (2005)	$904 952
United States	100%
Balance of trade (2005)	$888 388

Northwest Territories

Population (2005)
43 000
Land area
128.12 million ha
Forest and other wooded land
33.35 million ha
Territorial parks
13 363 ha

JACK PINE

RESOURCES	
Ownership (2005)	
Federal	100%
Forest type (2005)	
Softwood	53%
Mixedwood	47%
Harvest (volume)–Industrial roundwood (2004)[b]	26 thousand m^3
Harvest (area)–Industrial roundwood (2004)	51 ha
Area planted (2004)	29 ha
Area seeded (2004)	not available
Area defoliated by insects and beetle-killed trees (2004)[c]	not available
Number of fires (2005)[d]	261
Area burned (2005)[d]	224 631 ha

Nunavut

Population (2005)
30 000
Land area
200.80 million ha
Forest and other wooded land
0.94 million ha
Territorial parks
not available

RESOURCES	
Ownership (2005)	
Federal	100%
Forest type (2005)	
Softwood	52%
Mixedwood	48%

EXPLANATORY NOTES

FOREST AND OTHER WOODED LAND

"Other wooded land" refers to treed wetlands and land with slow-growing and scattered trees. The data regarding Canada's forest and other wooded land are based on Canada's Forest Inventory 2001 (CanFI 2001), which uses different categories than CanFI 1991. Comparisons between CanFI 1991 and CanFI 2001 cannot be made in a meaningful way due to a number of differences in methods and definitions in the source inventories.

LAND AREA

According to CanFI 2001, Canada's total area of 979.1 million hectares includes geographical features such as lakes, rivers, streams and watersheds. Although water is included, digitized information on lakes, rivers, streams and watersheds (except for the Great Lakes, some other large lakes and the St. Lawrence River) are not available in the database.

FOREST RESOURCE

Ownership data are provided for the total forest, other wooded land and water where information is available.

Although the federal government maintains ownership in the Yukon and Northwest Territories, the territorial governments have responsibility for managing their forests and selected other natural resources.

[a]ANNUAL ALLOWABLE CUT (AAC)

Information on the allowable annual cut (AAC) has been reported in *The State of Canada's Forests* since the fourth report to Parliament. Beginning with 2004 data, this is now referred to as wood supply. A series of profiles giving the current status of the wood supply in each jurisdiction is presented in the report. In addition to the AAC—which properly pertains only to the regulated harvest from provincial Crown land—the profiles include information on wood supply from private and federal lands.

The national wood supply figure was arrived at by estimating available data for private and federal lands. Ontario, Saskatchewan, Alberta, Yukon, Northwest Territories and Nunavut do not report wood supply from private lands. In British Columbia, Schedule A lands are those private industrial lands that are included in Tree Farm Licences (TFLs) for which AACs are set by the Chief Forester, and harvest levels are subject to the same control as Crown lands.

[b]HARVESTING

The national and provincial figures for harvesting volume include data for industrial roundwood only. The harvest level for fuelwood and firewood, which may be as high as 2.2 million cubic metres for a single province, is not included in these harvest figures. Although the AAC for British Columbia does not include all private lands, these lands are included in the harvest figure. The yearly harvest rate for British Columbia may fluctuate and, in some cases, may exceed the AAC. Over a five-year period, however, the harvest figure would be equal to or lower than the AAC.

[c]INSECT DEFOLIATION AND BEETLE-KILLED TREES

The data relating to insects were provided by provincial and territorial agencies, and they include areas in which there is tree mortality and moderate to severe defoliation. Defoliation does not always imply mortality; for example, stands with moderate defoliation often recover and may not lose much growth. Also, defoliation is mapped on an insect-species basis, and a given area may be afflicted by more than one species at a time. This may result in double or triple counting in areas affected by more than one species, exaggerating the extent of the total area defoliated.

[d]AREA BURNED

All figures are from the Canadian Interagency Forest Fire Centre. Area burned includes areas within national parks.

[e]REVENUE FROM GOODS MANUFACTURED

Beginning in 2004, the Annual Survey of Manufactures and Logging (ASML) replaced the Annual Survey of Manufactures and the Annual Survey of Forestry. Two changes have the greatest impact on the comparability of the principal statistics series: (1) some redefinition of the survey content and (2) a change in the coverage threshold for published statistics.

(1) Financial variables in the Annual Survey of Manufactures and Logging (ASML) survey are defined to adhere to the Statistics Canada Chart of Accounts (COA) classification. The COA is a standard classification based on generally accepted accounting principles. It was developed for reporting information on financial position and performance. As a result, some variables in the ASML are defined differently from those collected in past surveys for manufacturing and new variables have been added.

(2) Traditionally, published statistics for manufacturing covered the activities of businesses above certain dollar thresholds for sales of goods manufactured. For reference year 2004, these thresholds have been changed so that the new published (ASML) data series is not strictly comparable with the previously published data series for manufacturing. The previous table for manufacturing principal statistics covered the activities of businesses with annual sales greater than or equal to $30,000. The new table publishes principal statistics for businesses above certain revenue thresholds that vary by province and by industry. Below these thresholds are the smallest manufacturing businesses which are excluded from the ASML survey in order to reduce response burden.

[f]CERTIFICATION

If a forest area has been certified to more than one of the three sustainable forest management (SFM) standards (CSA, FSC and SFI), the area is counted only once; hence, the total certifications for SFM standards may be less than the sum of the individual totals for these standards. Source: Canadian Sustainable Forestry Certification Coalition, www.certificationcanada.org.

FOREST SECTOR PERFORMANCE

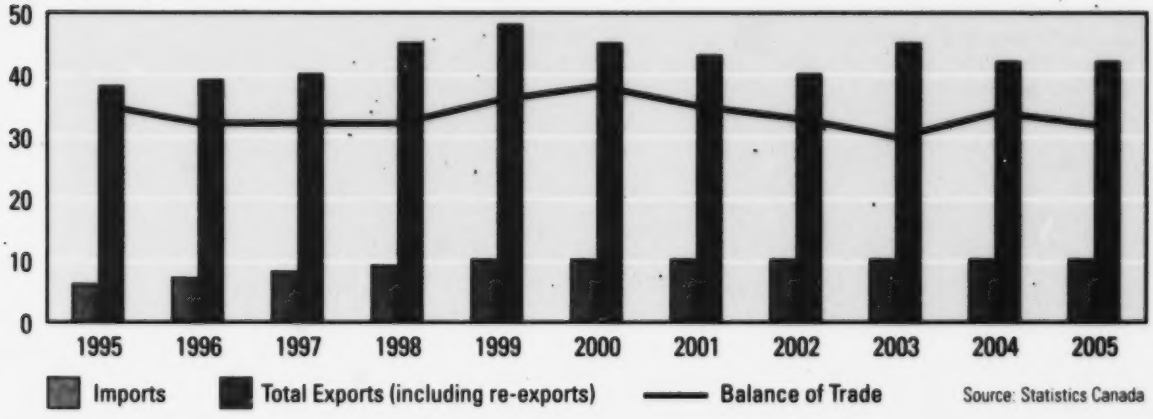
The forest industry provides many benefits to stakeholders such as workers, communities and businesses, and to Canadians as a whole. This sub-section looks at the economic benefits generated by the industry and various measures of economic performance. An important factor in this sub-section and the following "Forest Products" and "Non-Timber Forest Products" sub-sections is the exchange rate between the Canadian and U.S. dollars from one year to the next. In 2005, the Canadian dollar averaged 83 cents U.S., 7.3% higher than in 2004. This affects the volume and dollar value of goods sold internationally. When the Canadian dollar is relatively strong, the costs of Canadian producers relative to their U.S. competitors go up, resulting in fewer exports and more imports. In addition, the value of Canada's forest product exports tends to fall when the Canadian dollar strengthens because most of our exports are priced in U.S. dollars, given that the United States is our main customer. Holding prices and volumes constant, a stronger dollar erodes the value of exports when translated back into Canadian dollars.

BALANCE OF TRADE

Canada's trade balance (exports minus imports) in 2005 was $55.1 billion. Forest product exports make a large contribution to Canada's trade surplus ($31.9 billion in 2005); however, in recent years that contribution has declined. Since 2000, Canada's balance of trade in forest products has been on a steady decline, with the exception of 2004, when high wood prices pushed the value of Canadian exports higher. In 2005, the forest products trade balance resumed its decline, falling by 7.5% from 2004 levels to $31.9 billion, close to the value seen in 2003 when the forest products balance hit its lowest level in the past 10 years. The year-over-year reduction was due primarily to a stronger Canadian dollar, lower prices for lumber and wood panels, and a decline in shipment volumes for pulp and paper producers.

EXPORTS	BILLION DOLLARS	ANNUAL CHANGE (%)	
	2005	1 year	10 years
Trade balance	55.1	-1.1	4.2
Forest products contribution	31.9	-7.5	-0.9

Balance of Trade of Forest Products in Canada 1995–2005 (Billion dollars)



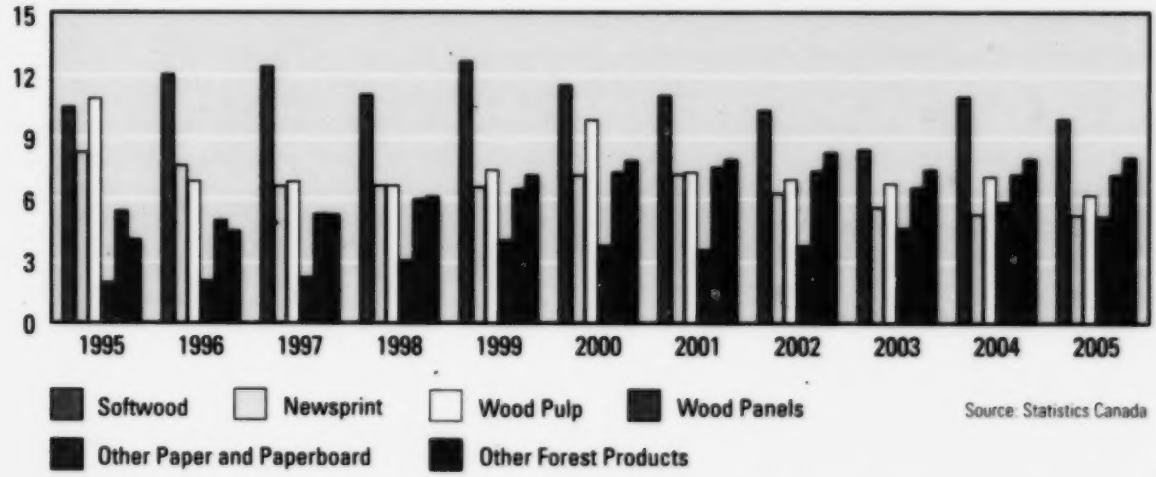
Source: Statistics Canada

EXPORTS OF FOREST PRODUCTS

Following significant growth in 2004, the export of forest products dropped in 2005 by 6% to $41.9 billion, remaining slightly higher than 1995 levels. The continued appreciation of the Canadian dollar compared to the U.S. dollar was the primary reason for the decrease. The major value reductions were in wood pulp and panels, and lumber. The decline in wood pulp exports was due in large part to the weakening of pulp markets in Asia and Europe, which pushed 2005 prices down. The decline in the value of lumber and wood panel exports was due primarily to a fall in prices for these products from the near-record highs of 2004, despite the booming North American housing market. In terms of volume, lumber and wood panel exports actually increased by 3.0% and 6.3%, respectively, over the past year. Conversely, strengthened prices for newsprint and many other grades of paper and paperboard moderated currency effects so that the export value of these products remained unchanged.

PRODUCT	BILLION DOLLARS	ANNUAL CHANGE (%)	
	2005	1 year	10 years
Softwood lumber	9.9	-9.9	-0.6
Newsprint	6.2	-0.9	-4.5
Wood pulp	5.3	-12.5	-5.5
Wood panels	5.2	-11.5	10.2
Other paper and paperboard	7.2	-0.3	2.8
Other forest products	8.1	0.6	7.0
Total	41.9	-6.0	0.1

Exports of Forest Products in Canada 1995–2005 (Billion dollars)



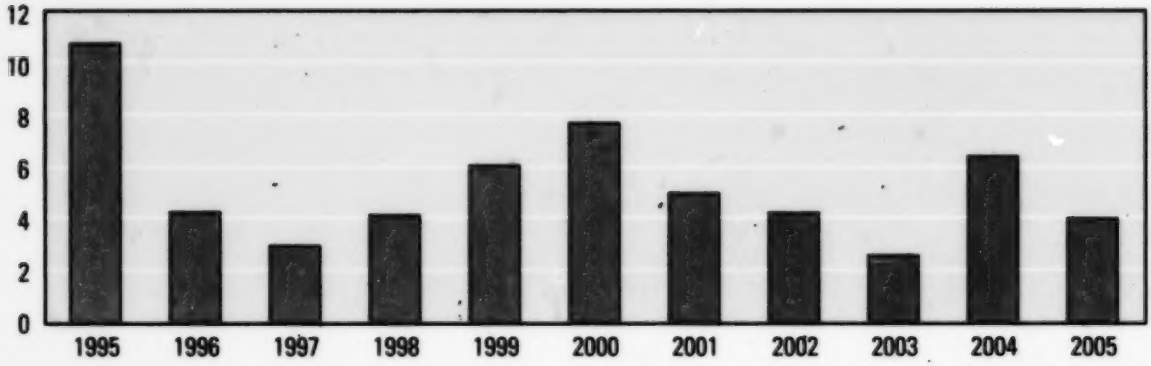
Source: Statistics Canada

OPERATING PROFITS

As seen over the past 10 years, operating profits in wood and paper manufacturing follow a strong cyclical trend with significant fluctuations over time. Most recently, operating profits decreased by 36.9% in 2005 to $4.1 billion, following significant growth in 2004. The drop in 2005 was due primarily to the strong Canadian dollar compared with the U.S. dollar, lower exports and higher overall costs, particularly for energy, fibre (in some regions), chemicals and transportation. The highly energy-intensive pulp and paper industry, where energy costs represent 25-35% of the manufacturing costs, was harder hit by the recent run-up in energy prices than the wood products industry. While the wood products industry continued to benefit from high demand from the North American housing market, decreases in wood prices led to lower operating revenue. The softwood lumber dispute also continued to drain the industry's finances.

OPERATING PROFITS	BILLION DOLLARS	ANNUAL CHANGE (%)	
	2005	1 year	10 years
Wood and paper manufacturing	4.1	-36.9	-62.3

Operating Profits in Wood and Paper Manufacturing 1995–2005 (Billion dollars)



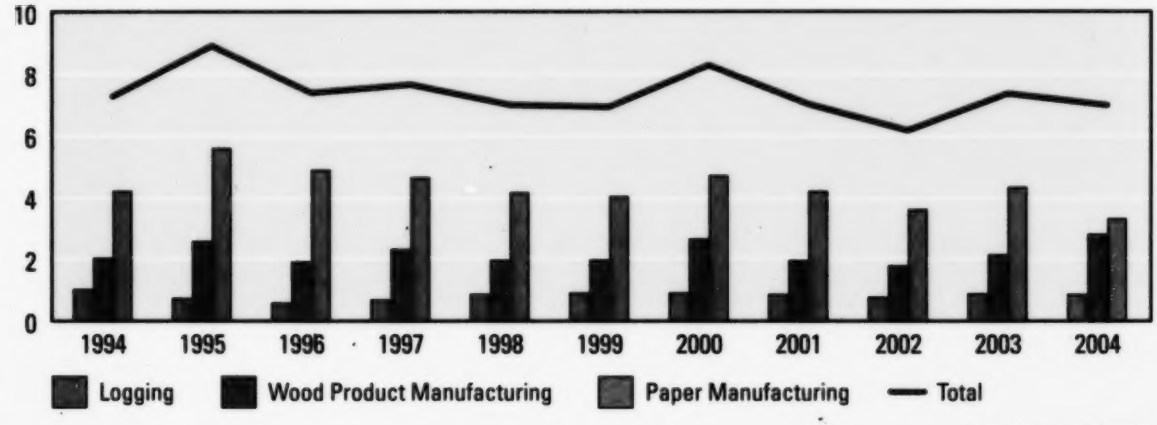
Source: Statistics Canada

CAPITAL AND REPAIR EXPENDITURES

In 2004, the industry spent $7.0 billion in capital investments and repairs, down by 5.1% ($373 million) from the previous year and representing a 0.4% decline over the last 10 years. While repair expenditures rose for the third consecutive year, new investments dropped by 15%, which accounted for the overall decline in expenditures. Because the pulp and paper industry is more capital intensive than the wood or logging industries, it accounted for almost half of the forest sector's total capital and repair expenditures. However, it also experienced the most significant reduction in these expenditures in 2004, falling by 23.5%, while the wood industry's expenditures rose by 30.7% to reach a peak of $2.8 billion. The wood industry benefited from near-record lumber and panel prices in 2004, as the North American housing market boom pushed up demand and prices for wood products.

CAPITAL AND REPAIR EXPENDITURES	BILLION DOLLARS	ANNUAL CHANGE (%)	
	2004	1 year	10 years
Wood product manufacturing	2.8	30.7	3.2
Paper manufacturing	3.3	-23.5	-2.3
Logging	0.9	-2.0	-1.7
Total	7.0	-5.1	-0.4

Capital and Repair Expenditures by Forest Industries 1994–2004 (Billion dollars)



Source: Statistics Canada

EMPLOYMENT IN THE FOREST INDUSTRY

In 2005, 339 900 people were employed in the forest industry, according to Statistics Canada's Labour Force Survey. This represents a decrease of 22 200, or 6.1%, from the previous year. Since 1999, employment levels in the forest industry have followed a cyclical pattern with peaks in 2000 and 2003 and troughs in 1999 and 2001. However, the recent drop in employment since the 2003 peak has been particularly sharp. Much of the decline was due to the large number of mill closures, particularly in the pulp and paper industry, since 2003.

Indirect and Induced Employment

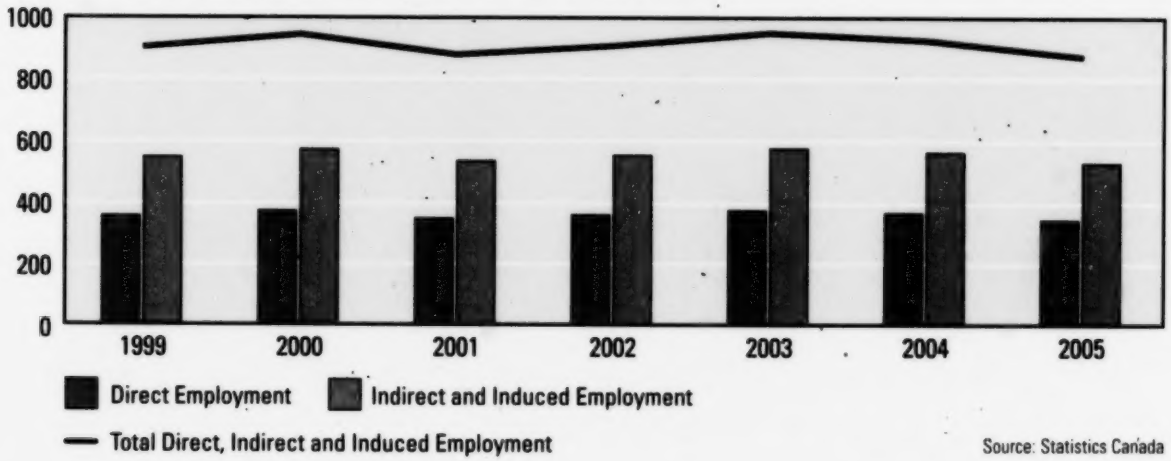
EMPLOYMENT	1999	2005
Direct employment	351 300	339 900
Indirect and induced employment	541 500	524 100
Total direct, indirect and induced employment	892 800	864 000

The forest industry also generates important economic benefits through indirect and induced employment. Indirect jobs are those that are created by forest activity, but are outside the industry. For example, when the industry buys materials such as chemicals, packing materials and energy, invests in machinery and equipment, builds mills and roads, and transports goods to domestic and international markets, it creates employment in those sectors. Induced jobs are the employment generated when workers in the forest industry or those employed in forest-related activities purchase consumer goods.

In 1999, according to Statistics Canada's input-output model, the forest industry was responsible for 261 500 indirect jobs and 280 000 induced jobs, for a total of 541 500. These are in addition to the 351 300 direct jobs that year.

Between 1999 and 2005, direct employment in the forest industry dropped by 3.2% to 339 900. Assuming a proportional decrease in indirect and induced employment, it is estimated that the forest industry generated a total of 524 100 indirect and induced jobs in 2005. Thus, the total estimated number of jobs created in and by the forest industry in 2005 was 864 000, down from an estimated 920 400 in 2004.

Direct, Indirect and Induced Employment 1999–2005 (Thousands)



Source: Statistics Canada

FOREST PRODUCTS

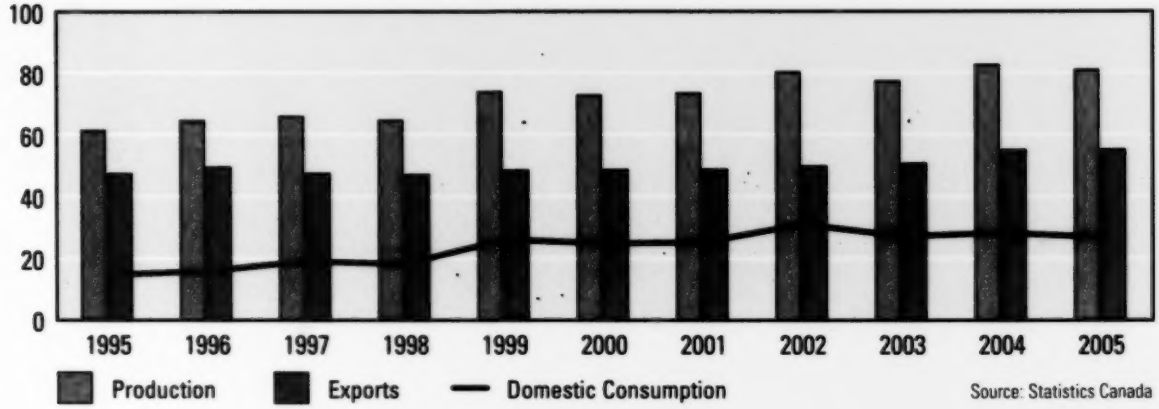
The main products of Canada's forest industry can be divided into two key groups—wood products, and pulp and paper products. The key wood products are softwood lumber, structural panels and engineered wood products. Value-added wood products such as millwork (for example, doors and windows) also make up a significant portion of Canada's wood manufacturing industries (approximately 20% of total shipments). The chief pulp and paper products are newsprint, printing and writing papers, and market pulp. Pulp and paper products also include other papers (for instance, tissue) and packaging, although these represent a relatively small portion of Canada's pulp and paper production.

SOFTWOOD LUMBER

Canada is the world's second largest producer of softwood lumber and the largest exporter. Almost all of Canada's softwood lumber is sold either to the United States (more than 60%) or within Canada (about 33%). The volume of Canada's total softwood exports increased by 0.3% in 2005, with shipments to the United States rising by 2.8% while exports to Japan and other countries dropped by 19.5% and 15.0% respectively. The increase in exports to the United States was fuelled by strong demand for lumber from the U.S. housing market, supported by low interest rates, a solid U.S. economy and reduced U.S. softwood lumber tariff rates compared with 2004 rates. Production, on the other hand, decreased (1.9%) as producers in many regions felt the impact of the strong Canadian dollar, which increased their costs relative to their U.S. competitors. However, production levels varied significantly across the country. In British Columbia, production increased as producers worked to salvage timber from areas affected by the mountain pine beetle epidemic. In contrast, Quebec's production declined in response to curtailments in timber supply, which increased wood fibre costs. Production also decreased in the Prairie and Atlantic regions while increasing slightly in Ontario.

SOFTWOOD LUMBER	MILLION CUBIC METRES	ANNUAL CHANGE (%)	
	2005	1 year	10 years
Production	81.2	-1.9	2.8
Exports	55.3	0.3	1.5
Domestic consumption	27.0	-4.5	6.2

Softwood Lumber Production, Exports and Domestic Consumption 1995–2005 (Million cubic metres)



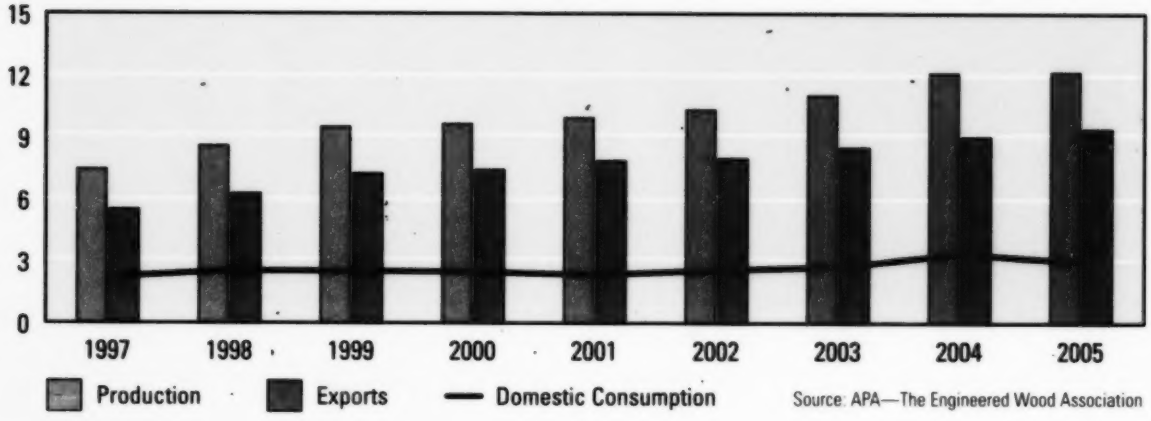
Source: Statistics Canada

STRUCTURAL PANELS

Structural panel products include both plywood and oriented strandboard (OSB). While both are important products in Canada, OSB has been gaining market share at the expense of plywood over the long term. In 2005, OSB constituted 81% of total structural panel production, compared with 75% in 1997. The main market for structural panel products is residential construction (54%), followed by repair and remodelling (21%) and industrial demand (20%). Within the residential construction market, single-family homes accounted for more than 85% of the demand. About three quarters of Canada's structural panel products are exported, with virtually all of these exports (99%) going to the United States. In 2005, following a record year of activity, structural panel production slowed by 0.4%, while exports grew by 4.2% in contrast with domestic consumption, which fell by 11.3%. The growth in exports was a result of strong demand in the U.S. housing market, buoyed by low interest rates. The decline in domestic consumption was due in part to lower Canadian housing starts, which fell by 2.0%.

STRUCTURAL PANELS	MILLION CUBIC METRES	ANNUAL CHANGE (%)	
	2005	1 year	8 years
Production	12.2	0.4	6.3
Exports	9.5	4.2	6.9
Domestic consumption	3.0	-11.3	3.7

Structural Panel Production, Exports and Domestic Consumption 1997–2005 (Million cubic metres)



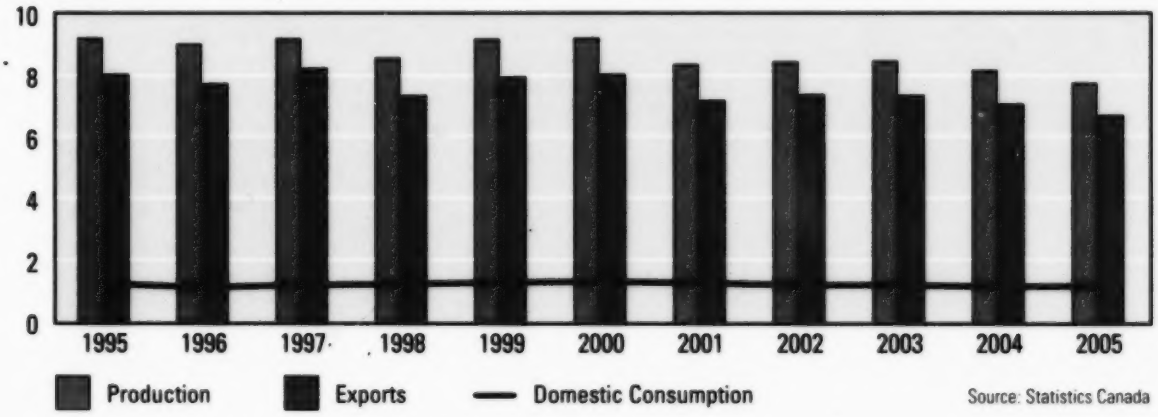
Source: APA—The Engineered Wood Association

NEWSPRINT

Canada is the world's leading producer and exporter of newsprint, with 75% of its newsprint exports going to the United States. However, while Canada has traditionally held a dominant position in the newsprint industry, production and consumption in North America have been slowly declining over the past 10 years. This decline is due to several factors including the maturation of the newsprint market, affording limited opportunities for growth; the shift in advertising from newspapers to online media sources; and the trend for newspaper publishers to trim their newsprint usage. In 2005, production dropped by 5.0% and exports fell by 5.1%, although domestic consumption increased by 1.6%. While the long-term factors are in continual play, the more recent phenomena of the strong Canadian dollar, rising wood fibre costs in certain regions and rapidly increasing energy prices have put additional pressure on producers, causing them to close mills and curtail production.

NEWSPRINT	MILLION TONNES	ANNUAL CHANGE (%)	
	2005	1 year	10 years
Production	7.8	-5.0	-1.7
Exports	6.7	-5.1	-1.8
Domestic consumption	1.1	1.6	-0.6

Newsprint Production, Exports and Domestic Consumption 1995–2005 (Million tonnes)



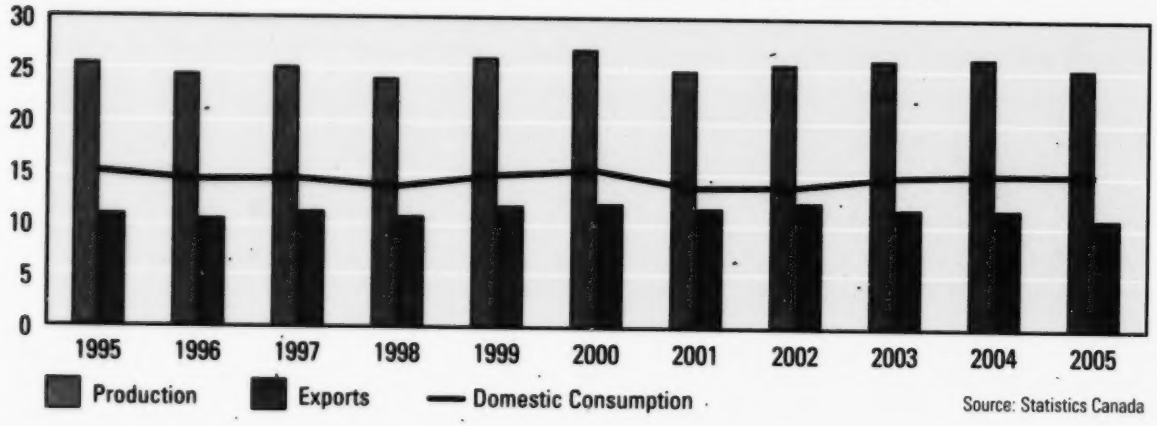
Source: Statistics Canada

WOOD PULP

Canada is the world's largest exporter of wood pulp, with key markets including the United States (40%), European Union (20%) and China (15%). In 2005, the volume of exports dropped by 7.6% from 2004 levels, while production and domestic consumption fell by 3.8% and 0.2% respectively. Facing higher prices for energy and wood fibre in some regions, a stronger Canadian dollar and shrinking demand for newsprint and other types of paper, wood pulp producers trimmed their output by means of numerous mill closures or simply by reining in production. While the impact of increased costs affected pulp producers across the nation, eastern Canadian producers have been particularly hard-hit due, in part, to regional differences in fibre costs. In British Columbia, wood chip prices have declined at an average annual rate of 4.6% (since 2000) as sawmills in the interior process timber affected by the mountain pine beetle, while prices in the eastern provinces have risen by 10.4% (annually) responding in part to sawmill closures in those regions which have reduced chip supplies.

WOOD PULP	MILLION TONNES	ANNUAL CHANGE (%)	
	2005	1 year	10 years
Production	25.2	-3.8	-0.1
Exports	10.6	-7.6	-0.1
Domestic consumption	14.9	-0.2	0.0

Wood Pulp Production, Exports and Domestic Consumption 1995–2005 (Million tonnes)



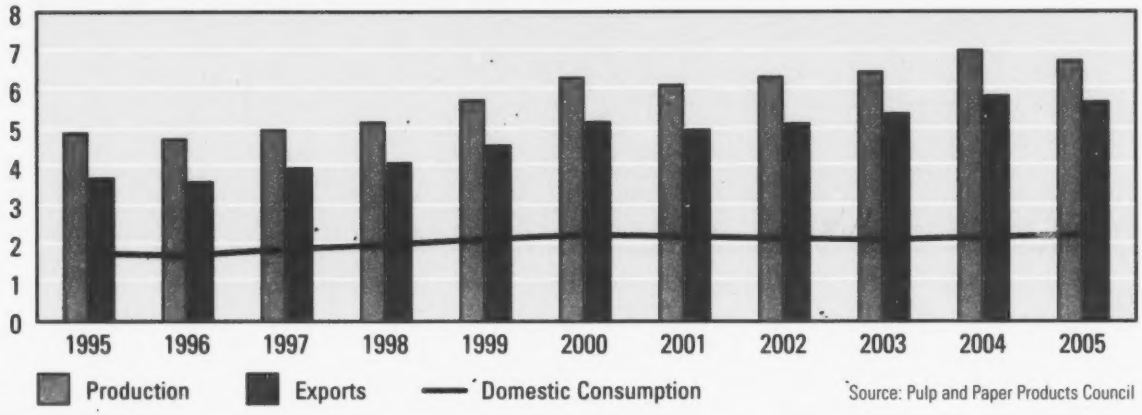
Source: Statistics Canada

PRINTING AND WRITING PAPER

Canada exports more than 80% of its printing and writing paper production, primarily to the United States. While Uncoated Groundwood (UGW) is the largest volume product, accounting for 63% of all printing and writing paper produced in Canada, UGW does not traditionally hold a large share of the entire U.S. printing and writing paper market. However, due to a number of quality improvements enabling relatively inexpensive production of higher-grade products, UGW can now compete successfully against several higher-grade Uncoated Freesheet products and is currently enjoying expansion at the expense of the latter. This has led to several industry developments, including the conversion of existing newsprint capacity into UGW-based capacity. In the long run, more such expansions are anticipated, driving growth in Canada's printing and writing paper industry. More recently, in 2005, exports of printing and writing paper declined by 2.8% while production dropped by 3.9% from 2004 levels. Although domestic consumption improved (2.2%), exports and production were dragged down by increasing costs for wood fibre and energy, a higher Canadian dollar and weak U.S. demand.

PRINTING AND WRITING PAPER	THOUSAND TONNES	ANNUAL CHANGE (%)	
	2005	1 year	10 years
Production	6.7	-3.9	3.3
Exports	5.7	-2.8	4.3
Domestic consumption	2.2	2.2	2.3

Printing and Writing Paper Production, Exports and Domestic Consumption 1995–2005 (Thousand tonnes)



Source: Pulp and Paper Products Council

NON-TIMBER FOREST PRODUCTS

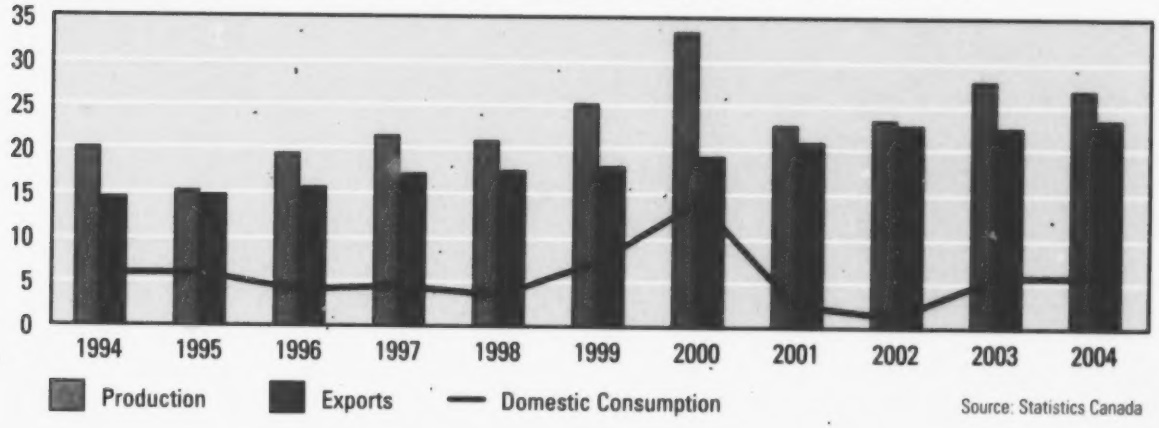
Non-timber forest products (NTFPs) are botanical items, other than timber, that are harvested from the forest. They include products such as edible berries, wild mushrooms and medicinal plants. Two of the more common NTFPs are maple products and Christmas trees.

MAPLE PRODUCTS

Canada accounts for 85% of the world's maple syrup production, with the United States supplying the remainder. More than 80% of Canada's production is exported to the United States. Japan is the second largest market with sales to this country growing significantly in recent years—doubling, in fact, from 2001 to 2003. In 2004, Canada's production of maple products dropped by 3.6% while exports increased by 4.1%. Even though production declined, Canadian suppliers were able to satisfy domestic and foreign markets by drawing on the high inventory left over from the exceptional 2000 harvest. Quebec is Canada's biggest producer of maple products (93%), with Ontario and New Brunswick accounting for most of the remainder. In 2005, the Canadian maple products industry received a boost when the *Fédération des producteurs acéricoles du Québec* (Quebec Federation of Maple Syrup Producers), in conjunction with the federal government, announced plans to promote maple products in international markets and to make the maple industry more innovative.

MAPLE PRODUCTS	MILLION DOLLARS	MILLION LITRES	ANNUAL CHANGE (%)	
	2004		1 year	10 years
Production	151.9	26.9	-3.6	2.9
Exports	154.1	23.6	4.1	5.0
Domestic consumption	3.2	6.0	1.5	0.0

Maple Products Production, Exports and Domestic Consumption 1994–2004 (Million litres)



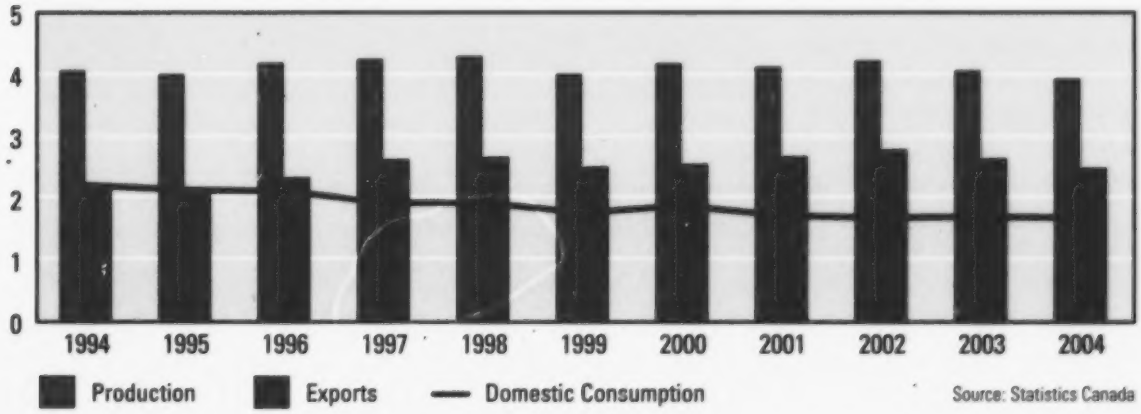
Source: Statistics Canada

CHRISTMAS TREES

CHRISTMAS TREES	MILLION DOLLARS	MILLION TREES	ANNUAL CHANGE (%)	
	2004		1 year	10 years
Production	62.2	3.9	-3.3	-0.3
Exports	36.2	2.5	-5.8	1.6
Domestic consumption	29.4	1.7	-0.5	-2.7

Canada's main Christmas tree species are balsam fir, spruce, Scots pine, lodgepole pine and Douglas fir. Some trees are harvested from natural forests while others, such as Scots pine, are grown on plantations. In 2004, Christmas tree production volumes dropped by 3.3% and export volumes fell by 5.8%. The decrease in exports was likely due to the strong Canadian dollar, which appreciated by 7.5% in 2004 over 2003. Most of Canada's Christmas tree exports in 2004 were from Quebec (1.2 million trees), Nova Scotia (0.9 million) and New Brunswick (0.4 million).

Christmas Tree Production, Exports and Domestic Consumption 1994–2004 (Million trees)



Source: Statistics Canada

FOREST HEALTH AND SILVICULTURE

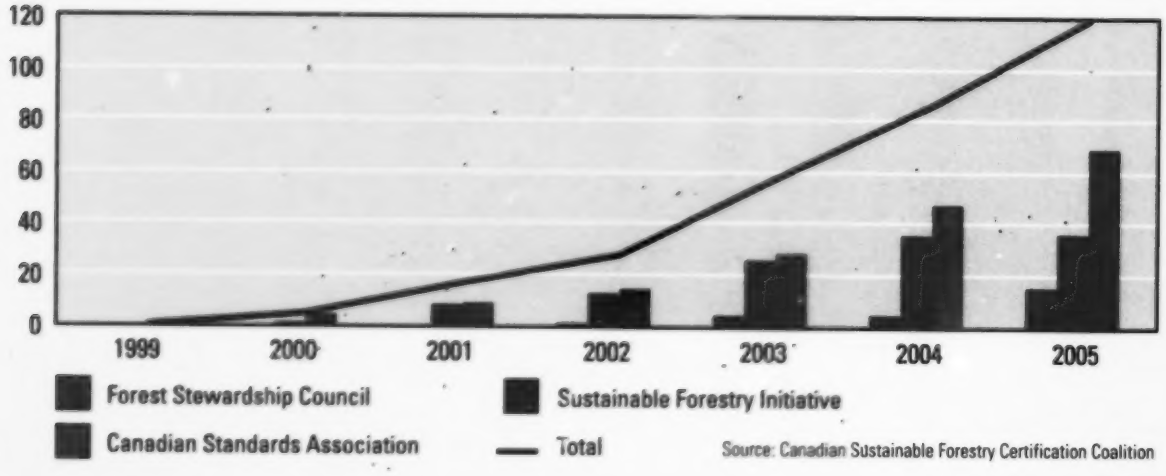
A healthy forest is one that maintains and sustains desirable ecosystem functions that can deliver a wide range of economic and environmental benefits. Both natural and human influences can impact forests in positive and negative ways. For example, forest fires and insect outbreaks can impact large areas of forest land, whereas investments in silviculture can enhance forest health and productivity. This sub-section discusses and reviews key factors that affect the health of Canada's forests.

FOREST CERTIFICATION

Forest certification is an important way of assuring buyers of forest products that the products they purchase come from sustainably managed forests. Canada's forest companies have made significant progress in forest certification. Canada now has the largest certified area of forests in the world, representing about 50% of global certified area. As of December 2005, nearly 120 million hectares—and an estimated annual allowable cut of 100 million cubic metres—had been certified under one or more of the three forest-specific certification systems available in Canada (Canadian Standards Association, Forest Stewardship Council and Sustainable Forestry Initiative). This represents a seven-fold increase in certified area since 2001, and an average annual growth rate of nearly 150% since 1999, when on-the-ground implementation of the standards began in Canada. This impressive growth rate is due in part to initiatives such as the Forest Products Association of Canada's 2002 commitment that all of the lands under its members' management be certified by the end of 2006, a goal that is well on the way to being met.

FOREST CERTIFICATION	MILLION HECTARES	ANNUAL CHANGE (%)	
	2005	1 year	6 years
Total	119.8	38.5	149.2

Forest Certification in Canada 1999–2005 (Million hectares)



Source: Canadian Sustainable Forestry Certification Coalition

HARVEST LEVELS AND WOOD SUPPLY

On provincial Crown lands, harvest levels are a regulated component associated with the licensing of forest management activities. These levels are usually specified in terms of an allowable annual cut (AAC). An AAC is the annual level of harvest allowed on a particular area of land over a specified number of years. In practice, annual harvest levels may be above or below the AAC, but must balance out over the regulation period.

Each province calculates AACs differently. Calculations are based on the size of the land base; the growth rate of trees; losses due to fire, insects and disease; accessibility; economic conditions; environmental considerations; silvicultural investment; degree of protection; and management objectives. There is no single correct harvest rate for a forest.

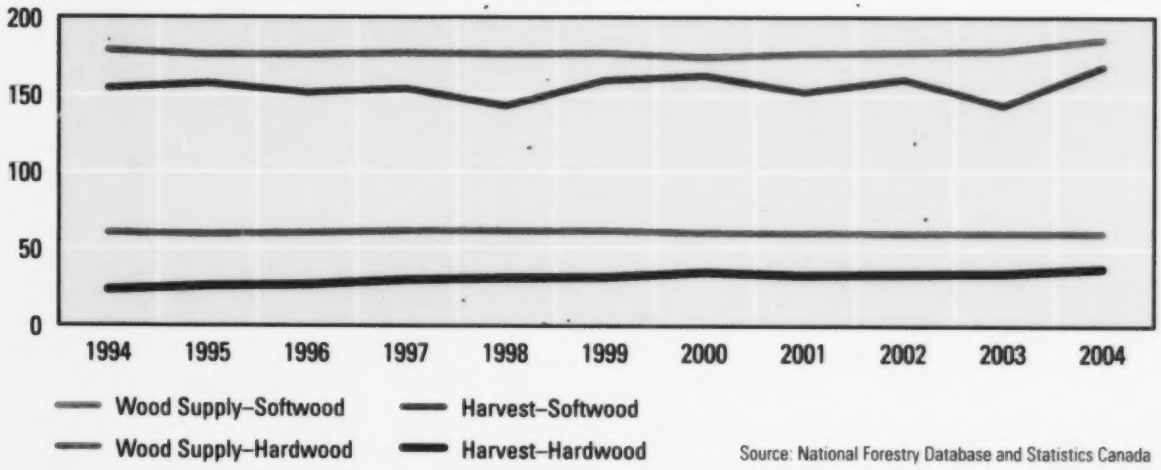
HARVEST LEVELS AND WOOD SUPPLY	MILLION CUBIC METRES	ANNUAL CHANGE (%)	
	2004	1 year	10 years
Wood supply–softwood	185.8	4.0	0.4
Wood supply–hardwood	60.1	-0.1	0.0
Harvest–softwood	168.2	17.6	0.9
Harvest–hardwood	37.4	9.0	4.9

Harvest levels on private, federal and territorial lands are not regulated by legislation, although the managers of these lands do sometimes set harvest targets. This means that the wood supply from private, federal and territorial lands can only be estimated, based on the sum of these targets and, for lands where targets have not been set, the average of past harvest levels.

While there is no official AAC for Canada as a whole, the country's "wood supply" can be estimated by combining the provincial AACs with the wood supply from private, federal and territorial lands. The results show that over the period from 1994 to 2004, Canada's wood supply remained stable at approximately 238 million cubic metres per year, 52 million cubic metres more than was actually harvested. In 2004, 37% of Canada's wood supply was located in British Columbia, followed by Quebec (22%), the Prairie provinces (18%), Ontario (14%) and the Atlantic region (9%).

From 1994 to 2004, annual softwood harvest levels remained relatively steady, averaging 155 million cubic metres per year, about 23 million cubic metres below the wood supply. While hardwood harvest levels increased by 61% in that period, from 23 million cubic metres per year to 37 million cubic metres, they were still well below the wood supply of 60 million cubic metres per year.

Harvest Levels and Wood Supply 1994–2004 (Million cubic metres)



Source: National Forestry Database and Statistics Canada

PLANTING AND SEEDING

By law, all forests harvested on Canada's public lands must be replaced. Foresters replace these harvested areas using either natural or artificial regeneration.

AREA AND NUMBER OF SEEDLINGS PLANTED	2004	ANNUAL CHANGE (%)	
		1 year	10 years
Area planted and seeded (thousand hectares)	382	-7.3	-2.1
Seedlings planted (million)	481	-0.2	-3.3

Natural regeneration occurs with little or no assistance by humans. For example, trees establish from seeds originating from the adjacent forest or when small trees in existing stands (advanced regeneration) are protected from change during the harvesting operation. The natural regeneration system being used varies by species and region in Canada.

Artificial regeneration involves either direct seeding of an area, or planting seedlings (young trees grown from seed in a greenhouse or nursery) or cuttings. Artificial regeneration, particularly planting, allows maximum control over the species, the spacing between trees and the timing of treatment.

Until the early 1950s, foresters relied almost exclusively on natural regeneration. Improvements in seedling production methods and changes in provincial standards for regeneration success have resulted in increased use of artificial regeneration.

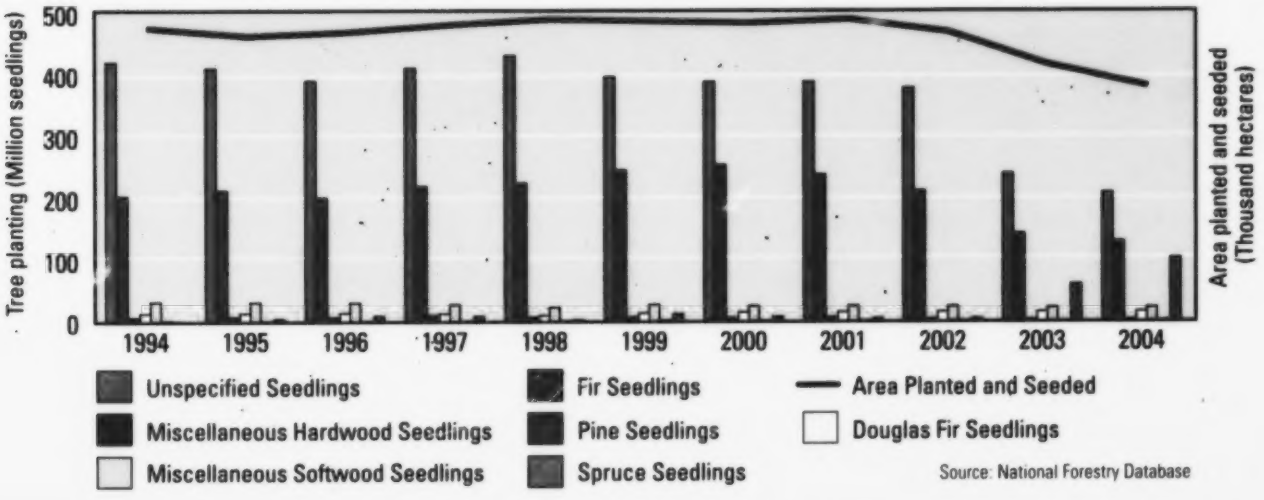
In 2004, 382 000 hectares were either planted or seeded in Canada. Quebec accounted for 70 000 hectares; Ontario, 104 000 hectares; and British Columbia, 156 000 hectares.

In 2004, British Columbia planted 184 million seedlings; Ontario, 106 million; and Quebec, 100 million. Of the 481 million seedlings planted in Canada, 96% were on provincial Crown land.

Over the past 10 years, the area regenerated by planting or seeding has dropped slightly (2.1%) as has the number of seedlings planted (3.3%). This may be due to a small decline in harvest over the past 10 years (0.4%) and an increase in the area of aspen harvested, as aspen is a species that regenerates naturally by sprouting from roots.

The graph below shows regeneration of areas disturbed by both harvesting and natural disturbances. It also includes a small area of afforestation (that is, the conversion to forest of land that has not been forested for a long time).

Number of Seedlings Planted (Million seedlings) **and Area Planted and Seeded** (Thousand hectares)
1994–2004



Source: National Forestry Database

FOREST FIRES

Forest fires in Canada vary considerably in number and in area burned. Historically, there are large fluctuations in fire activity, both nationally and among provinces and territories, in a given year. For example, Ontario went from a low of 6633 hectares burned in 2000 to a high of 314 219 hectares burned in 2003.

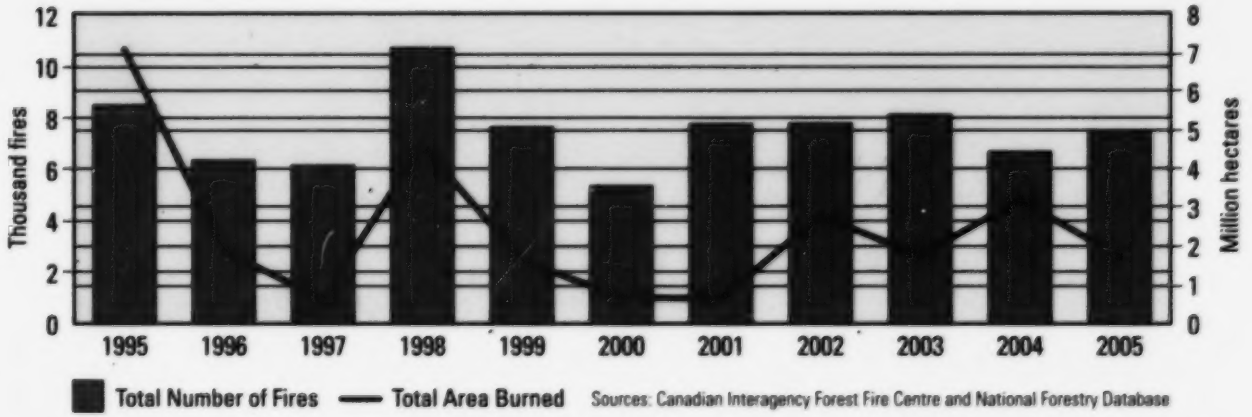
Nationally, the 2005 fire season represented a typical year with 7438 fires, close to the 10-year average of 7496, and 1.7 million hectares of area burned, below (70.8%) the 10-year average of 2.4 million hectares.

Quebec accounted for almost half (49%) of the area burned in Canada in 2005. A full 90% of the annual area burned in Quebec took place in May. This drew fire suppression resources from Saskatchewan, Manitoba, Ontario, Northwest Territories, Newfoundland and Labrador, and New Brunswick (British Columbia and the U.S. Forest Service contributed resources during the summer).

FOREST FIRES	2005	10-YEAR AVERAGE
Total number of fires	7438	7496
Total area burned	1.7 million hectares	2.4 million hectares

Forest fires tend to rage in warm, dry weather brought about by high-pressure ridges in the atmosphere. These ridges are associated with Rossby waves, also called planetary waves, which can be seen in the wave pattern of the jet stream. Planetary waves move slowly, usually west to east, influencing the regions under the ridges for days or weeks. Canada is approximately one planetary wavelength in size, which is why, every summer, at least one province or territory suffers an extreme fire season.

Number of Forest Fires (Thousand fires) **and Area Burned** (Million hectares) 1995–2005

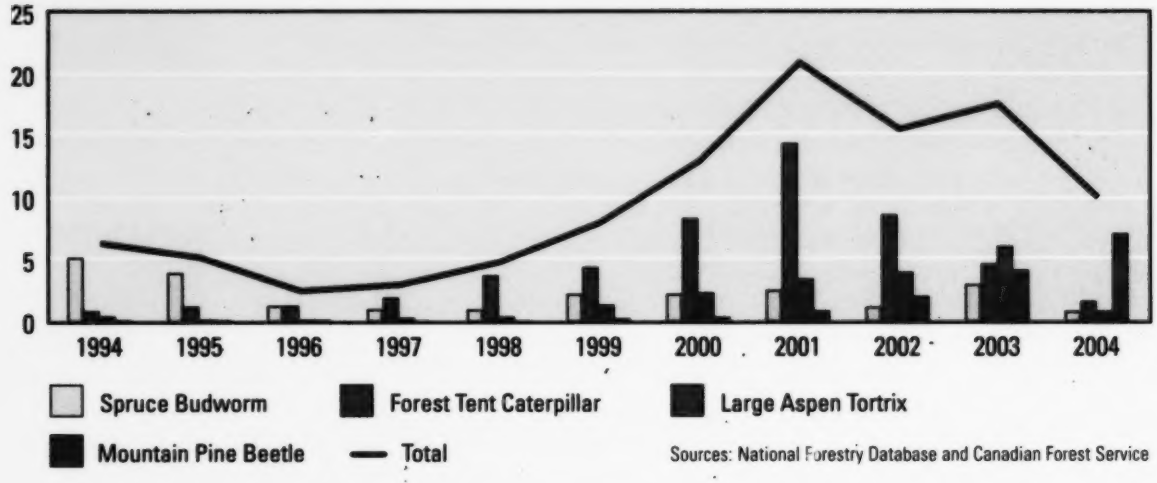


Sources: Canadian Interagency Forest Fire Centre and National Forestry Database

INSECT DEFOLIATION AND TREE MORTALITY

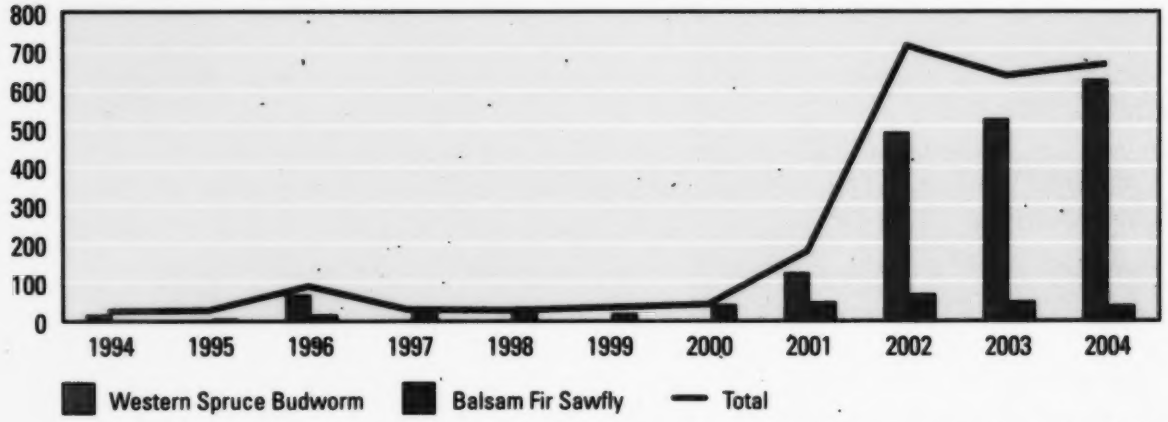
The National Forestry Database provides statistics on various aspects of Canada's forests, including insect damage. The database reports on areas in which there is tree mortality and/or moderate to severe defoliation due to insects. Moderate to severe defoliation means that 30% or more of the foliage has been removed. Significant growth losses are generally deemed to begin when crown defoliation reaches 40%. Among the insects that significantly damaged forests in 2004 are mountain pine beetle, large aspen tortrix, forest tent caterpillar, spruce budworm and western spruce budworm. Other insects such as gypsy moth, hemlock looper and balsam fir sawfly also caused defoliation over localized areas. Overall, 13.1 million hectares of forest area were affected in 2004, a decline from 20.5 million hectares in 2003.

Area Defoliated and Beetle-Killed Trees by Major Insects 1994–2004 (Million hectares)



Sources: National Forestry Database and Canadian Forest Service

Area Defoliated by Western Spruce Budworm and Balsam Fir Sawfly 1994–2004 (Thousand hectares)



Sources: National Forestry Database and Canadian Forest Service

2004 ▲ 2003

The **mountain pine beetle** is the most destructive pest of mature lodgepole pine forests in North America. British Columbia has been experiencing an epidemic of this insect for several years, and a large-scale effort has been mounted by federal/provincial governments, research institutes, First Nations, academic institutions and industry to mitigate the effects of the outbreak. In 2004, the mountain pine beetle killed trees over a forest area of more than 7 million hectares in British Columbia, up from 4 million hectares the previous year. Significant areas of attack occurred north of historical outbreak areas and are attributed in part to the absence of sufficiently cold temperatures to offset increases in the beetle population.

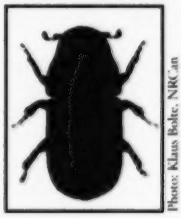


Photo: Klaus Bolte, NRCan

2003 ▼ 2004

The **large aspen tortrix** is one of the main insects associated with the trembling aspen. The defoliation caused by this insect generally does not affect tree survival as it occurs early enough in the summer for the tree to produce new foliage. In unusual circumstances, outbreaks may last beyond three years and may, if other stress factors such as drought are present, kill the tree. In 2004, this insect defoliated about 750 000 hectares of aspen forest in Canada, a significant drop from 6 million hectares the previous year. Much of this occurred in Alberta, where 320 725 hectares were defoliated in 2004 compared with 5.2 million hectares in 2003.

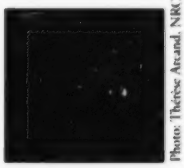


Photo: Thérèse Arcand, NRCan

2003 ▼ 2004

The **forest tent caterpillar** is another serious defoliator of trembling aspen in Canada. Outbreaks may last four to six years, and may return as frequently as every 10 years. Larger populations tend to occur in parkland and boreal mixedwood areas. Forest tent caterpillar infestations cause branch diebacks and growth reduction; extended periods of severe defoliation may kill the tree, especially if other stress factors such as drought are present. In 2004, defoliation by this insect was largely confined to Alberta and Ontario where a total of about 1.6 million hectares of aspen forest was affected, a sharp decline from 2001 when some 13 million hectares in Ontario alone were defoliated.

Photo: Thérèse Arcand, NRCan

2003 ▼ 2004

Spruce budworm is the most destructive insect pest of spruce and fir species in Canada. Outbreaks are part of the forest renewal cycle and usually last six to eight years but can last more than 10. Severe outbreaks in commercial forests, however, create serious wood supply problems. The larvae of spruce budworm damage trees by feeding on the current year's needles and cones and occasionally on mature needles. In 2004, 755 325 hectares were defoliated by this insect, the lowest level in the past 10 years and significantly lower than in peak years, which have reached 20 million hectares.

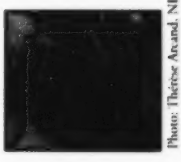


Photo: Thérèse Arcand, NRCan

2004 ▲ 2003

The area of forest damaged by **western spruce budworm** increased steadily from 123 638 hectares in 2001 to 623 735 hectares in 2004. This insect is a significant pest of Douglas fir in the interior of British Columbia. Spray programs using biological insecticides are frequently carried out for forest protection against both the spruce budworm and the western spruce budworm, on small portions of the defoliated area.

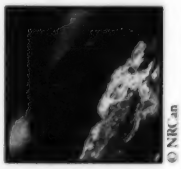
© NRCan

2003
▼
2004

© NRCan

The **balsam fir sawfly** is a native defoliator that feeds mainly on balsam fir and, occasionally on white spruce and black spruce. Outbreaks usually last only a few years and have occurred mostly in the Atlantic provinces. Western Newfoundland has experienced the most damage, with moderate to severe defoliation every year since 1996 and with the largest area (68 698 hectares) recorded in 2002. The amount of damage caused by this insect in western Newfoundland has diminished in recent years (39 366 hectares in 2004) due to aerial applications of a balsam fir sawfly-specific virus developed by the Canadian Forest Service of Natural Resources Canada.

UPDATE ON INVASIVE ALIEN SPECIES


© NRCan

A serious invasive alien species is the **emerald ash borer**, which was first detected in Windsor, Ontario, in 2002, and has since been detected through parts of southwestern Ontario. This insect attacks primarily native ash species, which are an important part of both our urban and forest environments. The emerald ash borer does not defoliate trees; rather, it kills them by feeding under the bark and disrupting the flow of nutrients and water throughout the tree. The movement of wood in the affected areas of southwestern Ontario is now regulated and, as this insect is also a serious pest in the United States, Canada and the United States are working together on strategies to combat its spread.

© NRCan

The **Asian longhorned beetle** was discovered in September 2003 in the Toronto/Vaughan area of Ontario. Numerous infested trees have been located in industrial, residential and park areas. This insect attacks many hardwood species in Canada, but prefers maple, elm, birch and sycamore. As with the emerald ash borer, tree removal is currently the only viable approach to eradicating this insect, although alternative pest control techniques are being investigated. To date, about 75 000 trees have been removed in the Toronto area control program, and it appears the program has been successful in containing the beetle to the greater Toronto area.

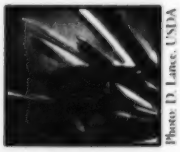


Photo: D. Lance, USDA

A new pest in eastern Canada is the **European wood wasp**, *Sirex noctilio*. Native to Europe, Asia and northern Africa, this insect was discovered in Ontario in 2005. It feeds on many species of pine and, given the climatic conditions of its native range, it could establish anywhere in North America where pine grows. The wood wasp is known to have caused serious damage in more southern latitudes and is considered "very high risk" in North America. Surveys will be conducted from Ontario to Nova Scotia in 2006 to determine the extent of the problem. This insect is currently a serious pest of pine plantations in Australia, South America and South Africa.

MILL CLOSURES AND MILL INVESTMENTS in the Canadian Forest Sector

As noted elsewhere in this report, Canada's forest industry has faced a number of competitiveness challenges over the past few years. These have led the industry to adjust by shutting down higher-cost production and investing in its more profitable assets.

The following tables provide a list of mill closures from April 1, 2005 through March 2006, and a list of major mill investments from January 1, 2005 through March 2006. As the first table illustrates, mill closures occurred in all regions of the country, with the majority taking place in Ontario and Quebec. Conversely, companies have invested in operations across Canada, with the majority occurring in the west.

CANADIAN MILL CLOSURES* (April 1, 2005–March 31, 2006)

DATE	COMPANY	LOCATION	PRODUCT / CAPACITY
April 2005	Devlin Timber (Devlin sawmill)	Kenora, Ontario	lumber
May 2005	Tembec Inc. (Marks Lumber Ltd.)	Brantford, Ontario	value-added lumber / 50 000 MBF**
May 2005	Norampac (Molson Street)	Montréal, Quebec	containerboard / 480 million square feet
May 2005	Tembec Inc. (La Sarre sawmill)	La Sarre, Quebec	lumber
May 2005	Tembec Inc. (Davidson sawmill)	Mansfield-et-Pontefract, Quebec	lumber / 55 000 MBF
May 2005	Tembec Inc. (Saint-Raymond mill)	Saint-Léonard-de Portneuf, Quebec	specialties / 68 000 tonnes
May 2005	Louisiana-Pacific Corporation (Malakwa sawmill)	Malakwa, British Columbia	lumber / 50 000 MBF
June 2005	Canfor (Hines Creek Timber)	Hines Creek, Alberta	lumber
June 2005	International Forest Products (Field sawmill)	Courtenay, British Columbia	lumber / 220 000 MBF
June 2005	Uniboard	New Liskeard, Ontario	particleboard
June 2005	Uniboard (production line 1)	Sayabec, Quebec	particleboard
July 2005	Tembec Inc. (TKL sawmill)	Témiscaming, Quebec	lumber / 15 000 MBF
August 2005	Smurfit-Stone (medium paper mill)	Bathurst, New Brunswick	containerboard / 243 000 tonnes
August 2005	Smurfit-Stone (New Richmond mill)	New Richmond, Quebec	containerboard / 235 000 tonnes
September 2005	West Fraser Timber Co. Ltd. (Seehta Forest Products Ltd. sawmill)	Red Earth Creek, Alberta	dimension, boards / 45 000 MBF
September 2005	Interact Wood Products Ltd. (laminated wood plant)	Clearwater, British Columbia	laminated wood
September 2005	Norampac (paper machine No. 1)	Red Rock, Ontario	paper / 150 000 tonnes
September 2005	International Forest Products (Fraser Reman plant / Fraser Mills)	Coquitlam, British Columbia	remanufacturing facility
September 2005	J.D. Irving, Limited (Lewis sawmill)	Weymouth, Nova Scotia	lumber / 150 MBF

* Includes both partial (machine) and full mill closures whether indefinite or permanent.
** MBF = thousand board feet
Source: Company press releases, newspaper articles

DATE	COMPANY	LOCATION	PRODUCT / CAPACITY
October 2005	Abitibi-Consolidated Inc.	Grand Falls, Newfoundland and Labrador	newsprint / 60 000 tonnes
October 2005	Abitibi-Consolidated Inc.	Stephenville, Newfoundland and Labrador	newsprint / 194 000 tonnes
October 2005	Kimberly-Clark Corp.	Saint-Hyacinthe, Quebec	hygiene products
October 2005	Western Forest Products Inc. (Saltair mill)	Ladysmith, British Columbia	lumber
October 2005	Western Forest Products Inc. (Silvertree mill)	Vancouver, British Columbia	lumber
November 2005	Interlake Papers Inc. / Cellu Tissue machine	St. Catherines, Ontario	tissue paper / 10 000 tonnes
November 2005	Domtar Inc. (Lebel-sur-Quévillon)	Lebel-sur-Quévillon, Quebec	kraft pulp / 300 000 tonnes
November 2005	Uniboard (Temiskaming Shores particleboard plant)	Temiskaming Shores, Ontario	particleboard
December 2005	Abitibi-Consolidated Inc. (planer and lumber mills)	Champneuf, Quebec	lumber / 12 000 MBF
December 2005	Fraser Papers (paperboard mill)	Edmundston, New Brunswick	recycled paperboard / 60 000 tonnes
December 2005	Abitibi-Consolidated Inc.	Kenora, Ontario	newsprint / 240 000 tonnes
December 2005	Atlas Lumber (Alberta) Ltd.	Blairmore, Alberta	dimension lumber / 30 000 MBF
December 2005	Domtar Inc. (Lebel-sur-Quévillon)	Chapleau, Ontario	lumber / 90 000 MBF
January 2006	Cascades Fine Papers Group Inc. (paper machine No. 5)	Saint-Jérôme, Quebec	uncoated woodfree, freesheet / 8000 tonnes
January 2006	Buchanan Forest Products (Great West Timber)	Thunder Bay, Ontario	lumber
January 2006	Weyerhaeuser (Prince Albert pulp and paper mill)	Prince Albert, Saskatchewan	market pulp and fine papers / 410 000 tonnes
January 2006	NEWPRO (particleboard plant)	Wanham, Alberta	particleboard / 90 million square feet
January 2006	Cascades Inc. (Cascades Fine Papers Group Inc.)	Thunder Bay, Ontario	fine paper / 175 000 tonnes
February 2006	Domtar Inc. (Grand Remous and Malartic)	Grand Remous and Malartic, Quebec	lumber / 550 000 MBF
March 2006	Cascadia Forest Products Ltd. (Island Phoenix sawmill)	Nanaimo, British Columbia	cedar
March 2006	Cascades Inc. (Pickering)	Pickering, Ontario	paper towel and bathroom tissue
March 2006	Western Forest Products Inc.	Squamish, British Columbia	northern bleached softwood kraft pulp / 275 000 tonnes
March 2006	Sturgeon Timber Ltd.	Dorion, Ontario	wood chips / 500 000 cubic metres
March 2006	TriCept Industries (planing mill)	Hearst, Ontario	lumber
March 2006	Shermag	Notre-Dame-de-Montauban, Quebec	furniture
March 2006	Domtar Inc. (PM No. 10 and PM No. 11)	Ottawa, Ontario	paper / 65 000 tonnes
March 2006	Domtar Inc. (pulp and paper mills)	Cornwall, Ontario	kraft pulp and fine paper / 425 000 tonnes

MILL INVESTMENTS (January 1, 2005–March 31, 2006)				
DATE ANNOUNCED	**ESTIMATED DATE OF COMPLETION**	**COMPANY**	**MILL LOCATION**	
December 2004	Q3 2005	Abitibi-LP Engineered Wood Inc.	Saint-Prime, Quebec	
2005	Q1 2007	Ainsworth	Grande Prairie, Alberta	
Q3 2005	April 2006	Atlantic Packaging Products Ltd. (Scarborough mill)	Scarborough, Ontario	
March 2002	2005	Canfor-LP OSB Corp. (Peace Valley OSB mill)	Fort St. John, British Columbia	
June 2005	2006	Canfor	Fort Nelson, British Columbia	
December 2005	N/A	Cascades Inc. (Fine Papers Group)	Saint-Jérôme, Quebec, Sainte-Hélène-de-Breakeyville, Quebec	
N/A	Q3 2005	Catalyst Paper Corporation / NorskeCanada	Campbell River (Elk Falls), British Columbia	
N/A	January 2005	Catalyst Paper Corporation / NorskeCanada	Crofton, British Columbia	
N/A	Q3 2005	Catalyst Paper Corporation / NorskeCanada	Powell River, British Columbia	
2004	May 2005	Interfor	New Westminster, British Columbia (Queensboro mill)	
February 2005	Q1 2006	J.D. Irving, Limited (Irving Paper)	Saint John, New Brunswick	
August 2005		Kruger Inc. (Energy Group and Publication Papers division)	Brompton, Quebec	
September 2004	2005	Ced-Or Forest Products Inc.	Témiscaming, Quebec	
2005	April 2006	Pope & Talbot	Grand Forks, British Columbia	
October 2004	June 2005	Tembec Inc.	Elko, British Columbia	
November 2004	Q3 2005	Tembec Inc. - Société générale de financement du Québec (50-50 joint venture)	Amos, Quebec	
January 2005	2005	Tembec Inc.	Chapleau, Ontario	
October 2004	June 2005	Tolko Industries Ltd.	High Level, Alberta	
June 2005	Q3 2007	Tolko Industries Ltd.	Slave Lake, Alberta	
2005	2005	West Fraser Timber Co. Ltd. / Sundre Forest Products Inc.	Sundre and Hinton, Alberta	
2005	Fall 2006	West Fraser Timber Co. Ltd.	Quesnel, British Columbia	
2005	Mid-2006	West Fraser Timber Co. Ltd.	Kitimat, British Columbia	
2005	Early 2006	West Fraser Timber Co. Ltd. (West Fraser Newsprint Ltd.)	Whitecourt, Alberta	
March 2006	2008	West Fraser Timber Co. Ltd.	Hinton, Alberta	
February 2005	Early 2007	Weyerhaeuser Co.	Grande Prairie, Alberta	
March 2006	N/A	Zellstoff Celgar Limited (Castlegar mill)	Castlegar, British Columbia	

	DESCRIPTION OF INVESTMENT	PRODUCT	ANNUAL CAPACITY AFFECTED*	AMOUNT INVESTED
	New–engineered wood facility	Value-added wood	187.5 million square feet	$13 million
	New–second line OSB plant	OSB	+600 million square feet; overall capacity increases to 1.3 billion square feet	$170 million ($250 million total for all years)
	Expansion–installation of new recycled corrugating medium machine	Containerboard	200 000 tonnes	N/A
	New–mill and facility	OSB	820 million square feet	$200 million
	Modernization–new dryers, emission control and other equipment	OSB	+115 million square feet	$25.6 million
	Modernization–new press; optimization of mill	Specialty paper; pulp	N/A	$9 million
	Expansion–new equipment	Pulp	+17 000 tonnes	$8.3 million
	Modernization–upgrades to facility	Pulp	+21 000 tonnes	$6.9 million
	Modernization–conversion from newsprint to specialty paper	Specialty paper	N/A	$5.1 million
	Rebuild	Lumber	53 million board feet	$15.1 million ($25.8 million total for all years)
	Expansion–new equipment	Specialty paper (supercalendered)	210 000 tonnes	$220 million over last 3 years
	New–biomass co-generation plant	Biomass/Pulp	+23 megawatts	$85 million
	New–mill	OSB	210 million square feet	$68 million
	Expansion and modernization	Lumber	255 million board feet (lumber); +95 million board feet (plane)	N/A
	Modernization–upgrade primary saw lines and secondary processing equipment	Lumber	+18 million board feet	$17 million
	New–laminated veneer lumber (LVL) plant	LVL	55.2 million board feet	$130 million
	Expansion–install new boiler and kiln	Lumber	+36 million board feet	~ $14 million
	Modernization–upgrade sawmill	Lumber	200 million square feet	$65 million
	New–OSB plant	OSB	600 million square feet	$250 million
	Modernization–new scanning equipment	Lumber	281 million board feet (Hinton); 255 million board feet (Sundre)	~ $100 million
	Rebuild	Lumber	+120 million board feet	$46 million ($120 million total for all years)
	Expansion–new equipment to generate electricity for mill consumption	Electricity	+20 megawatts	$16 million
	Modernization–upgrade equipment	Newsprint	N/A	$6 million
	Modernization–upgrade the No. 2 pulp machine to increase its speed and productivity	Pulp	N/A	$20 million
	Modernization–new recovery boiler	Pulp	+30 000 tonnes	$129 million
	Modernization–capital plan to improve efficiency and reliability and reduce operating costs	Pulp	+40 000 tonnes	$28 million

*The +/- sign indicates change in capacity; otherwise figures indicate total capacity of mill.

In Focus: FOREST INDUSTRY COMPETITIVENESS

INDUSTRY AND COMMUNITIES in Transition

The past few years have brought sweeping change to the companies and communities that depend on Canada's forests. Changes in timber supply, technology, exchange rates, input costs and world markets are forcing the industry to examine how it operates, what it produces and where it stands in the marketplace. Costs are rising, demand is shifting, mills are closing, firms are restructuring. And forest communities are caught up in the tide, their futures.shaped by the forces of change.

What are these forces altering the forest sector? How are they influencing industry competitiveness? What of the communities at the heart of the sector? How are they weathering the transitions? How are governments and firms responding and preparing to meet the future? In answering these questions, this article paints a picture of Canada's forest sector today—coping with transition, readying itself for the future.

THE FOREST INDUSTRY: MANY INDUSTRIES

Though it is common to refer to Canada's "forest industry," the term is something of a misnomer. Far from being a single industry, the sector consists of many mini-industries, most of which fall into two groups: wood products, and pulp and paper. The wood products industry includes lumber, panels, engineered wood products and other value-added items. Pulp and paper covers market pulp, paper products (for example, newsprint, printing and writing paper) and paperboard products (for example, boxboard, containerboard). When all product areas are combined, Canada is the world's number-one exporter of forest products, responsible for 17 percent of global wood exports.

The forest industry varies according to region as well. Eastern Canada is dominated by pulp and paper, while the west is more focused on wood products. Quebec, Ontario and British Columbia are the provinces with the highest numbers of forest workers. The Atlantic region, Quebec and British Columbia are the most forest-dependent regions, with a large share of their economy based on the sector.

Key forest exports also vary by region. The United States is by far the largest buyer of Canadian forest products, purchasing 87 percent of our wood product exports and 72 percent of our pulp and paper exports in 2004. But reliance on U.S. markets is greater in eastern Canada than in the west. Unlike the eastern provinces, British Columbia ships nearly a quarter of its wood product exports offshore and fully 60 percent of its pulp and paper exports.

THE FORCES OF CHANGE

With unfortunate timing, a series of domestic, market and trade forces are converging on the forest sector, brewing what some observers have called a "perfect storm." These forces are shaking the competitiveness of the forest industry, a critical part of Canada's economy, and threatening the future of forest communities.

DOMESTIC FORCES

A steady, sufficient supply of low-cost wood is an essential ingredient for a competitive forest sector. But over the past few years, Canada's fibre supply has been changing. In some regions, less wood is available for harvesting because of provincial policies to reduce the amount cut and to protect non-timber values. Quebec, for example, is dropping its annual allowable cut (AAC) by 20 percent over three years. In other regions, such as Ontario, accessibility is an issue. Supply near the major mills is dwindling, drawing the industry northward to stands that are more costly to harvest. In the east, mills in New Brunswick and Newfoundland and Labrador are reporting wood shortages. In the west, some areas cleared for oil and gas exploration are not being replanted, which may affect future AAC levels. The British Columbia interior, for the moment enjoying greater supply from the salvage of beetle-infested wood, faces serious shortages once the salvage is over. (See "The Economics of Infestation" on page 58.)

Technology is another force reshaping how the forest industry does business. Technology is, in many respects, a boon. It has enabled more efficient use of what is cut. It has helped companies become more productive and compete with global producers. It has led to more value-added products and improved wood panel products, especially OSB (oriented strandboard), laminated beams and I-joists. Yet technology has brought challenges as well. It has taken a bite out of employment, with fewer workers needed to cut and process wood. Workers now need more education and different skills, which means upgrading and training. Also, because of technology, low-quality fibres from other countries are now more useable for more products, eroding a long-time market advantage for Canada—fibre quality.

Finally, the escalating cost of energy, transportation and other basic inputs has been taking a toll on companies. Energy costs have been a factor in many recent mill closures, especially in Ontario, where the price of electricity has skyrocketed by up to 30 percent. High fuel prices, which affect logging, road building and transportation, have hiked the cost of delivered wood, especially in Ontario and Quebec, where timber is often trucked long distances to mills.

What's driving change?

DOMESTIC FORCES:
- changes in regional fibre supply
- new technology
- higher energy and other input costs

MARKET FORCES:
- shifting demand for traditional commodities
- changes in export markets
- more low-cost competitors on the global scene

TRADE FORCES:
- softwood lumber dispute
- stronger Canadian dollar

MARKET FORCES

The global forest products market has been in flux for some time now. Demand is falling for some of the mainstays of Canada's industry. Newsprint, for example, has been hit hard by declining newspaper circulation and the rise of the Internet. At the same time, demand is growing for wood products such as OSB, which has rapidly gained market acceptance.

The geographical lines of the export market for forest products are being redrawn as well. The pulp industry, for instance, is shifting toward Asia, where booming economies are hungry for paper. At the same time, Canada is facing stiff competition from low-cost producers in Russia, Asia and South America. These operators, many of which harvest from fast-growing plantations, often have newer, larger, more efficient mills; lower labour costs; and little in the way of social and environmental protections compared to Canada. What do all these factors add up to? Tougher export markets, to the detriment of Canadian suppliers.

Annual newsprint production in Canada (Thousand tonnes)

TRADE FORCES

The softwood lumber dispute, which has disrupted trade between Canada and the United States for several years, remained unresolved at the beginning of 2006. However, on April 27, the Prime Minister announced that Canada and the United States had reached an agreement-in-principle to end this long-standing conflict. When finalized, the agreement will result in the end of U.S. duties on Canadian exports of softwood lumber and see some 80 percent of the duties returned to Canadian lumber producers. U.S. softwood lumber duties have cost Canadian forest companies, many of them in British Columbia, more than $5 billion. Some companies have compensated for this by decreasing their unit costs; others have had to shut down their operations.

In addition, the industry has been hurt by the stronger Canadian dollar. As our currency appreciates relative to the U.S. dollar, our products become more expensive south of the border. This is no small matter given the huge proportion of our forest product exports that go to the United States. According to estimates from the Forest Products Association of Canada, for every cent our dollar gains, there is a $528 million drop in revenue for Canadian forest companies.

INDUSTRY IN TRANSITION

The different sectors of the forest industry are reacting to these forces in different ways. The wood product sectors are faring best, particularly in western Canada. There, lumber capacity is expanding because of the large amount of beetle-killed timber entering the wood supply. Wood panels, especially OSB, are enjoying steady market growth and healthy investment. Capacity is increasing in this sector and large OSB mills are springing up. The west is capitalizing on its proximity to Asia, increasing exports to China and other booming economies. Also, western forest companies are continuing to consolidate, creating bigger, more efficient operations that can better withstand current market forces.

The picture is grimmer, though, for pulp and paper, the backbone of the industry through much of eastern Canada. The pulp industry is saddled with steep production costs, largely because of expensive energy; high delivered wood costs, especially in the east; and production inefficiencies arising from small, aging mills. Add to this low levels of new investment in the industry and growing competition from low-cost producers and plantations abroad, and it is no surprise the Canadian pulp sector is struggling.

Newsprint is not faring much better. Sinking demand has led to a series of mill closures and heavy job losses, again with the east bearing the brunt. Some newsprint mills are switching to other types of paper production, a good move with exports of printing and writing paper on the upswing. Yet, this shift has resulted in lower profit margins, causing Canadian production of some paper grades to cease.

In short, the sectors and regions of Canada's forest industry are performing differently in the current market. The east is suffering more as a result of its struggling pulp and paper industry and reliance on

SNAPSHOT OF THE EAST: REELING FROM CHANGE

The dozens of communities in northern Ontario that rely on the forest industry have been especially vulnerable to recent economic conditions. Shutdowns have put thousands out of work and are sending some single-industry communities into a tailspin. In Kenora, Red Rock, Dryden, Thunder Bay, Terrace Bay, Kapuskasing and other centres in Ontario's north, residents are facing huge adjustments due to layoffs, closures and limited prospects.

The same forces behind shutdowns across the country are responsible for the rash of closures in northern Ontario. But one condition is worse for Ontario—the high cost of energy. Electricity prices have skyrocketed in the province, to the point where energy makes up 30 to 40 percent of the cost of getting wood from the forest to the mill. For many companies in northern Ontario, energy has become the make-or-break number on the balance sheet.

For residents of Kenora, a town of 16 500 near the Manitoba border, the lead-up to Christmas 2005 brought devastating news. One day before Squamish, a B.C. town of the same size, learned its pulp mill would close, Kenora received parallel news. Abitibi-Consolidated said it would permanently close the town's newsprint mill, leaving 390 people without work. The closure was one of two announced by Abitibi that day, the other in Stephenville, Newfoundland and Labrador.

Energy costs were the main reason behind the closure. Abitibi spent the fall of 2005 exploring ways of lowering costs to keep the mill running at a smaller capacity. The company even asked employees to take a 20-percent wage cut while it looked into co-generation to reduce energy costs. But talks broke off in December. Abitibi CEO John Weaver said the decision to close the mill was difficult. "However, these steps are clearly necessary as we continue to face softening demand in the newsprint segment, increasing energy costs and a very strong Canadian dollar."

Several weeks earlier and 500 kilometres east, forest workers in Thunder Bay had heard a similar announcement. In late November 2005, Cascades said it was closing its coated paper plant; 375 workers were affected. The company cited a similar list of reasons: falling prices for fine paper, reduced demand, the higher cost of raw material and energy, and the strong Canadian dollar.

Late January 2006 brought more bad news to Thunder Bay, this time from South Carolina-based Bowater. Another 280 people would lose their jobs because of a kraft mill shutdown. Said Bowater's Don Campbell, "Costs to operate this kraft mill have deteriorated and are at unacceptable levels right now, mainly due to high energy costs, including electricity, but also natural gas, and then the high and unacceptable fibre costs." As often happens, the closure will affect other operations, in this case, a Buchanan-owned sawmill that had long shipped wood chips to Bowater.

What does the future hold for the forest-based companies and communities of northern Ontario? At this point, it is hard to say. Industry and unions are lobbying the province for measures that will, among other things, ease the burden of high electricity prices. Around Kenora, there is even talk of separating from Ontario and joining Manitoba, where energy is abundant and half the price. In the meantime, efforts are underway to alert urban Canadians to what the *Toronto Star* has called "a quiet devastation . . . throughout Northern Ontario's forest industry."

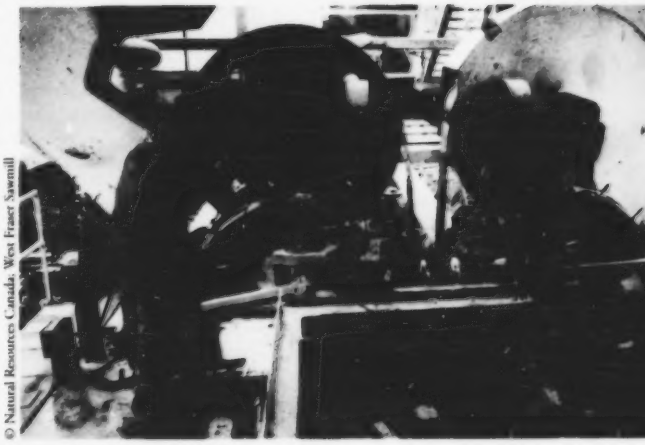
U.S. markets. The west is in better shape because its soft pulp and paper market is offset by a somewhat healthier wood products industry. But regardless of how the regions are weathering the storm, there is no question that the Canadian industry as a whole—and therefore the Canadian economy and society as a whole—is being buffeted.

COMMUNITIES IN TRANSITION

By all accounts, 2005 was a tough year for forest communities in Canada. According to an analysis conducted by the Canadian Forest Service of Natural Resources Canada, more than 50 mills announced closures or significant downsizing, which resulted in nearly 9000 job losses. In fact, since 2003 mill closures have resulted in more than 16 000 announced layoffs across Canada. Many of these jobs were high-paying and based in communities where the forest industry is a cornerstone of the economy.

In these communities, non-forest businesses feel the loss as well. Each job in the forest industry supports roughly two indirect jobs. When well-paid forest workers lose their jobs, the community's income drops and other sectors, such as retail, the housing market and the service industry, fall off. The community as a whole is left with an eroded tax base, an outflow of job-seekers and, in some cases, few prospects for economic growth. The full effects of milll closures may take years to surface. By then, especially in remote communities with few alternatives to forestry, the effects may be irreversible.

Pulp and paper has been hardest hit by recent changes in the forest sector, and eastern Canada, with its reliance on pulp and paper, has been the hardest-hit region. But no part of Canada has been exempt. From Grand Falls and Stephenville in Newfoundland and Labrador, to Prince Albert, Saskatchewan, to Port Alberni, British Columbia, communities are facing shutdowns and layoffs, and the economic instability, retraining and population loss that inevitably follow. Northern Ontario, home to some of Canada's most forest-dependent communities, has been especially pummelled. So has Quebec, where the sector is readying itself for



© Natural Resources Canada, West Fraser Sawmill

even more job losses in the coming years as reduced AACs take effect.

Even communities where the forest industry is still healthy have their troubles. Increasingly, the rural and remote areas where companies operate are losing residents, especially young people, to the cities. This migration will mean labour shortages when today's aging workforce starts to retire. There are two related complications. First, hiring is low on the agenda for most forest companies faced with downsizing and closures. And second, forestry is still widely dismissed as a low-tech, low-skill sector, when the opposite is true: more than ever, the industry needs a technology-savvy, skilled workforce.

One way to address these labour problems is to mount a recruitment effort that shows the industry for what it is—a leading-edge, world-class employer. Another, some say, is to tap more effectively into Aboriginal communities. Many of these settlements are already located in the remote areas where the industry operates, and many have a growing youth population. Aboriginal communities present an excellent opportunity—a ready supply of local young people who, given the right education and training, could buoy up the forestry workforce.

Aboriginal communities have some unique concerns. Their economic ties to the forest are strong: forestry and related businesses are the main economic activity and source of earned income for 80 percent of First Nation communities. For these communities, the

SNAPSHOT OF THE WEST: COPING WITH CHANGE

Nestled between the waters of Howe Sound and the coast mountains, Squamish, British Columbia, is a kind of bellwether for Canada's forest industry. Once a thriving forestry town, this deep-water port northwest of Vancouver has gradually bid the industry farewell. First, there were cutbacks in local logging. Then, in 2004, a major sawmill owned by Interfor was closed and dismantled, throwing 120 people out of work. In December 2005 came the knock-down punch: the closure of Woodfibre, a 93-year-old pulp mill owned by Western Forest Products (WFP), leaving 323 full-time workers unemployed.

WFP's decision to close Woodfibre speaks to the changes sweeping Canada's forest industry. The pulp mill had been on shaky financial footing for years, said the company. Rising energy costs were a factor, as was the weakening pulp market. WFP made several attempts to sell the mill, all of them unsuccessful.

For WFP, the closure of Woodfibre is part of a larger deal with Canfor. The wood chips WFP once sent to Woodfibre will now go to the Port Mellon pulp mill in Howe Sound, run by Canfor and Oji Paper Canada. In exchange, WFP will take over Canfor's logging division on northern Vancouver Island. The deal means a more secure fibre supply for Port Mellon, a larger mill than Woodfibre and one that produces both pulp and paper. It is also an important step in WFP's plan to move from pulp to the more profitable lumber sector.

WFP's decision is typical of the path the forest industry is taking in western Canada. Staying competitive means consolidating, streamlining and focusing operations where they are most profitable. But it also means shaking up the communities where the forest industry does business. "This is a difficult decision as many long-term employees are affected," said Reynold Hert, WFP's president and CEO, when announcing the closure. "Our team at Squamish has worked hard to improve operations, but it is a relatively small mill by industry standards with outdated technology and high costs."

As for the town, Squamish has been working hard to switch its economy from a traditional resource base to a more diversified one. And the future looks promising. Squamish is in a better position than some other centres to cope with the shift away from forestry. For one thing, the industry's exit from the area has been gradual. For another, the town's location between Vancouver and Whistler makes it an ideal service and bedroom community for both. Plans are currently afoot to establish a privately funded alternative university in the area. Furthermore, a myriad of natural attractions has turned Squamish into a premier outdoor destination, one that will enter the world spotlight in the run-up to the 2010 winter Olympics in Vancouver.

The closure of Woodfibre, a fixture of the community for nearly a century, remains a harsh reality in Squamish, especially for the hundreds who lost their jobs. In this town, as in so many forest towns across Canada, change in the forest industry means change in the community. In Squamish, the community is doing what it can to cope with change, looking beyond the mill to a different way of living within the forest.

pressing question, through all the industry changes, continues to be who owns and manages the forest resource. In regions where their ownership is confirmed, Aboriginal people are increasingly managing their own forests and running their own operations. In regions where ownership has yet to be settled, the outcome of land claims could greatly affect the amount of forest land under Aboriginal stewardship. How this land is managed and whether it remains, or becomes, commercially available will have an overall effect on timber supply. Certain timber licences may be impacted by changes to who is responsible for managing and harvesting. In the long run, Aboriginal entitlement to forests will usher in yet more transitions for forest companies and the communities that depend on them.

STRATEGIES FOR CHANGE

Governments and industry have been fighting to keep up with the changes affecting the forest sector. Provincial governments, as the jurisdictions responsible for 77 percent of Canada's forests, have introduced policies and programs to assist the industry and communities. The federal government also has an important role to play, given the forest sector's importance to the national economy. Industry, for its part, has been modifying its structure and operations to become more competitive. Here is an overview of the strategies that may help Canada's forest sector steer through these troubled times.

Papiers Masson: One paper machine replaces three

Photo: R. Gal, with permission from Papiers Masson

PROVINCIAL / TERRITORIAL GOVERNMENTS

At the provincial and territorial level, governments are concentrating on leveraging new capital, ensuring the long-term sustainability of wood supply and enhancing value-added manufacturing. Especially in the east, the provinces have been stepping up with policies and funding to help industry and communities change with the times. Ontario announced a $350-million loan guarantee program in June 2005, followed by a bundle of measures to combat some of the industry's worst problems. Among them are conditional grants to leverage capital for value-added manufacturing and for programs that promote efficient fibre use, worker training, electricity conservation and co-generation. In February 2006, the province pledged another $220 million to subsidize the cost of access roads and reduce stumpage fees.

Similarly, Quebec has introduced various packages to help the forest sector adjust, especially to supply reductions in the province. The most recent measures, unveiled in the government's March 2006 budget, earmarked $925 million for the sector. Besides supporting new product development, technology transfer and market diversification, Quebec is also addressing social change—helping workers return to school or the labour market and providing training and upgrading.

New Brunswick, where the forest industry is central to the economy, has likewise put together an assistance package. Besides maintaining the annual allowable cut, New Brunswick is decreasing pulpwood royalties paid to the province. It has also announced strategies to leverage capital, eliminate capital tax, cut transportation costs, promote bioenergy and upgrade workers' skills.

FEDERAL GOVERNMENT

Since 2002–2003, the federal government has invested $531 million in the forest sector in a number of areas:

- offshore market development
- funding for forest industry research institutes
- community and worker adjustment
- advocacy and litigation for the softwood lumber dispute
- mountain pine beetle infestation
- community adjustment in Quebec.

Installation of biogas energy unit at Cascades Fine Papers Group

Photo: Courtesy of Cascades Resources

The Canada Wood Export Program, a five-year partnership with the wood industry begun in 2002, concentrates on diversifying Canada's offshore wood exports. Projects funded by the program have led to higher overseas sales of products such as prefabricated homes, and have boosted exports of Canadian wood products to China by more than 76 percent. Another federal program, Value to Wood, encourages research and technology transfer in value-added production.

INDUSTRY

On the front line of current changes, the forest industry has had to react quickly and decisively to shore up its competitiveness. Its most visible strategies have involved restructuring: streamlining operations in the east, consolidating operations in the west. This restructuring is far from over. Observers predict more closures and amalgamations ahead before the sector as a whole can return to profitability.

Forest companies are also working to diversify their products and their markets. Some mills are shifting from newsprint to higher-margin papers. Some companies are getting out of pulp and paper altogether to concentrate on the more robust wood products industry. There is growing interest in bioenergy which, besides easing energy costs, could become a product line. And the industry continues to develop new niche products and seek new markets for Canadian forest goods.

Improving productivity is the other key to remaining competitive. Recent moves to close small, outdated, inefficient mills will help with overall productivity. However, innovation is crucial. Forest research institutes, universities and other R&D bodies are more important than ever in helping the industry find ways to become more efficient and gain more value from Canada's wood. (See "Innovation and Competitiveness in Canada's Forests" on page 62.)

To chart the industry's future course, the Forest Products Association of Canada (FPAC) has proposed an agenda of changes that industry and governments can make to ensure a healthy, competitive forest sector. The agenda is outlined in the February 2006 publication *Industry Vision: Building Towards the Future.*

BUILDING A STRONG FUTURE

The changes sweeping through Canada's forest sector are not over yet. Rationalization, especially in the pulp and paper industry, is expected to continue over the next few years as companies respond to market signals and adjust their production accordingly. And forest communities, especially those with few economic alternatives, will continue to feel the effects.

Restructuring in Canada's forest sector is unavoidable. But it is also necessary if the industry and the communities that depend on it are to remain healthy and competitive in the long term. This period of transition is steering the sector on a new course, opening up new ways of capitalizing on Canada's valuable forest resources. Tapping into expanding markets such as China, developing Canada's value-added wood industry, embracing innovation and new technologies, increasing bioenergy—these are just some of the opportunities that can help forest companies and communities strengthen and rebuild for the future.

Mountain Pine Beetle: THE ECONOMICS OF INFESTATION

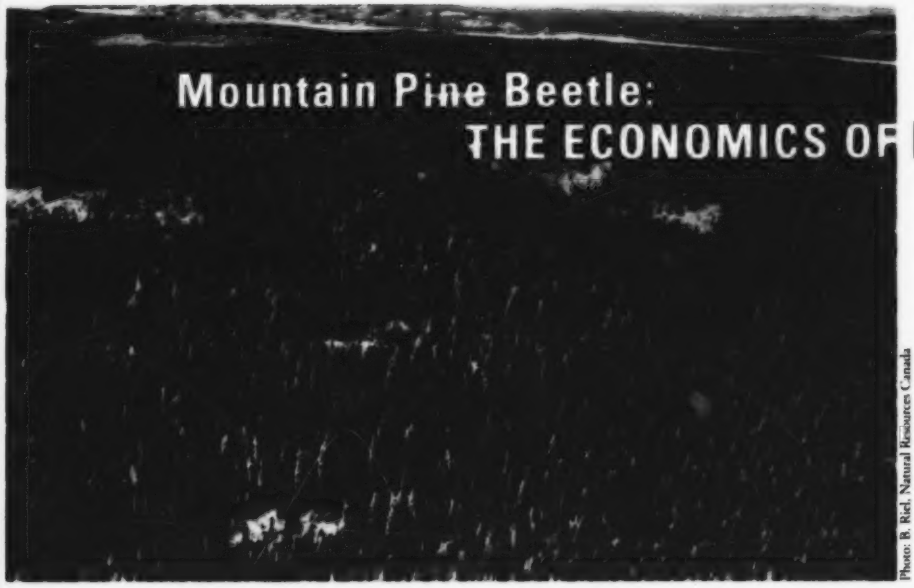


Photo: B. Riel, Natural Resources Canada

At a time when the Canadian forest industry is consumed with questions of change, including change in wood supply, British Columbia's forests are being consumed much more literally. Since the mid-1990s, the mountain pine beetle has been swarming the province's pine forests, leaving behind a wake of dead and dying blue-stained trees.

The impact of this tiny invader is immense. The current epidemic has killed pines across millions of hectares and thrown forest ecosystems out of kilter in the process. And it has unbalanced the fibre supply equation in British Columbia, Canada's largest producer of wood products, turning the outbreak into a national concern. For the industry as a whole, the infestation is raising sobering questions. Chief among these questions are how to adapt operations today, how to prepare for the long-term consequences, and how to do both while balancing forest health and competitiveness.

THE EPIDEMIC

The mountain pine beetle is native to the lodgepole pine forests of western North America and is a periodic source of disturbance in these stands. Normally, forest fires and cold temperatures combine to keep the population low. But in this case, nearly a century of wildfire suppression and recent milder winters have combined to create ideal conditions for the pest. Western forests are full of mature pine, the invader's preferred host, and the beetle's mortality rate is low. The result: the largest infestation ever recorded in North America.

Spreading at an alarming rate, by 2005, the epidemic had extended to 8.7 million hectares of British Columbia forest. To date, some 450 million cubic metres of pine have been killed—that is six years' worth of harvest at pre-infestation levels. Forecasters believe that, by 2013, some 80 percent of the province's mature pine may be affected.

What's more, research shows that the beetle's suitable range is extending to the east and north and to higher altitudes. There are outbreaks in western and southern Alberta, over the border into Saskatchewan, and in several U.S. states. (See figure on page 60.) The epidemic is now threatening different pine species, including the jack pine of the northern boreal forest. Should the beetle take hold there, the infestation could go national.

The pine beetle's mark on the forest, including ecosystems, habitat, watershed and species mix, is matched by its impact on forest companies and communities. The infestation has prompted British Columbia to raise its AAC (annual allowable cut) so that the industry can salvage wood affected by the beetle. This harvesting boost spells good economic times for industry and communities, and it is partly why western companies, especially in the wood products sector, are weathering current markets better than their eastern counterparts. But the supply boom will be short-lived. Once the salvage is over, the province will be left with damaged forests and some

FEDERAL BEETLE ASSISTANCE

In 2002, the federal government unveiled its Mountain Pine Beetle Initiative (MPBI), a six-year, $40-million package to lessen the impact and spread of the epidemic. Administered by Natural Resources Canada, the MPBI complements provincial strategies in British Columbia and Alberta.

The MPBI is divided into land-based programs and a research program. The land-based programs have two aims. One is to provide financial and technical help to private, non-industrial forest owners affected by the beetle. The other is to address beetle-wood harvesting and forest restoration on federally managed lands, including national parks and First Nations territory. As for the research program, it promotes and shares the knowledge required for monitoring, controlling and responding to the threat of beetle spread. It also delivers options to soften the ecological, economic and social repercussions of the epidemic.

In the MPBI's first three years, 220 private and 92 First Nation forest-land projects were completed or initiated. Parks Canada has introduced more than 60 beetle-management projects in the Rocky Mountain national parks, the leading edge of the epidemic's eastward spread.

Early in 2005, the federal government gave British Columbia another $100 million to combat the effects of the infestation. The province is using the funds to deliver a three-year program that will concentrate on beetle control, fire safety, economic diversification in communities, product and market development and habitat protection.

tough challenges—among them an altered industry, a scaled-down workforce, changed communities and a pronounced impact on British Columbia's economic base.

REACTING TODAY

The amount of beetle-killed timber in British Columbia is huge and growing. To capture some value before the wood deteriorates entirely, the province has raised the AAC and harvesting has increased. This decision has introduced a number of immediate concerns. High on the list is the question of how to balance current harvest levels with the broader goals of sustainable development, ecological health and non-timber values. Other concerns include how to manage the timber flow, how to modify operations to process salvaged timber and how to market the end products.

Salvaged lodgepole pine with major splits and bluestain

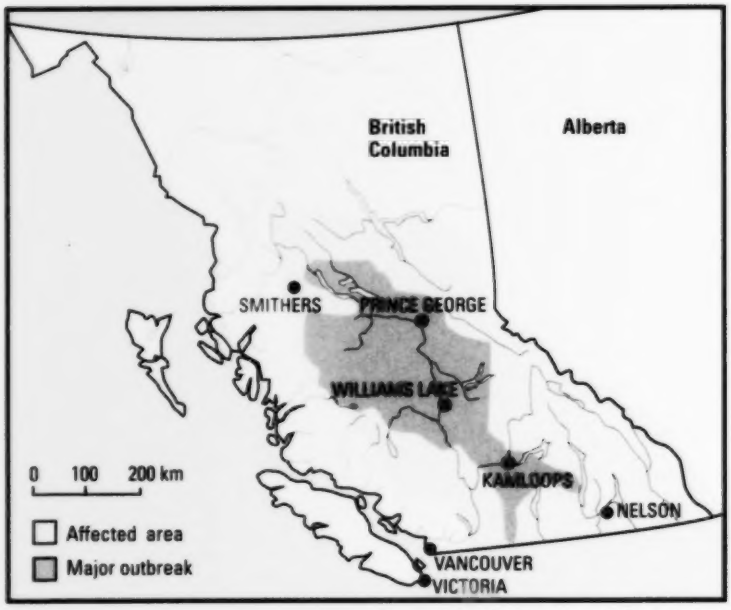
Photo: Courtesy of Paprican, 2005

For the forest industry, the key to staying healthy and competitive in the near term is to find the best ways of using and marketing this windfall of wood. Beetle-affected timber has characteristics all its own. It is more resinous and permeable than unaffected pine and is checked with cracks and splits. It is also stained blue from the fungus carried by the beetle.

These features are being investigated, with federal funding, by Canada's three national forestry research institutes—Forest Engineering Research Institute of

Canada, Forintek Canada Corp., and the Pulp and Paper Research Institute of Canada—to conclude how best to use post-beetle wood. The good news is that structurally, lumber made from this wood meets market standards. This means that much beetle-affected fibre can be used for traditional wood products. Just the same, research projects are underway to develop alternative products using the salvaged wood. Besides the work going on at the institutes, projects are being funded through British Columbia's Mountain Pine Beetle Action Plan and by Forestry Innovation Investment, a provincial Crown corporation. Here are some of the most promising uses to date.

Total area affected by mountain pine beetle in western Canada



Source: Natural Resources Canada (February 2005)

- Greater permeability may be an advantage for products treated with preservatives and fire retardants, such as decking, siding and termite-proof framing.
- Niche markets may emerge for blue-stained lumber products because of their unusual appearance.
- There is potential for producing glulam, as well as wood cement and wood plastic composite products.
- The breakage from processing dry lumber will mean more wood available for remanufacturing and components.

Developing beetle-killed wood products is only half of the solution; marketing them is the other. To stay competitive now, and to pave the way for long-term opportunities, the industry needs to maintain its current markets and find new ones for new products. It needs to publicize the facts about the performance, durability and other good characteristics of beetle-affected wood. And it needs to reassure markets about regeneration and future supply in western forests.

PLANNING FOR TOMORROW

Canada is just starting to come to terms with the long-range effects of this unprecedented attack. The physical and ecological legacy of both the infestation and the salvage harvesting is clear. But, fortunately, the outbreak, though unprecedented, is part of the natural disturbance cycle in pine forests, and the pine stands will likely recover on their own.

The commercial and social legacy is just as clear. The future shortage of timber in some of Canada's largest, most abundant forests will have obvious consequences. Estimates vary, but harvesting will likely dip 15 to 25 percent below pre-epidemic levels. Exactly how this reduction will affect western forest operations and communities is difficult to predict, but work is already underway to try to soften and offset the long-term effects.

For forest companies, getting more value from less wood may be the key to staying competitive in the face of future wood shortages. Current research could lead to new engineered wood products, for instance, that carry a higher price tag than lumber. Bioenergy is another promising avenue, one that would

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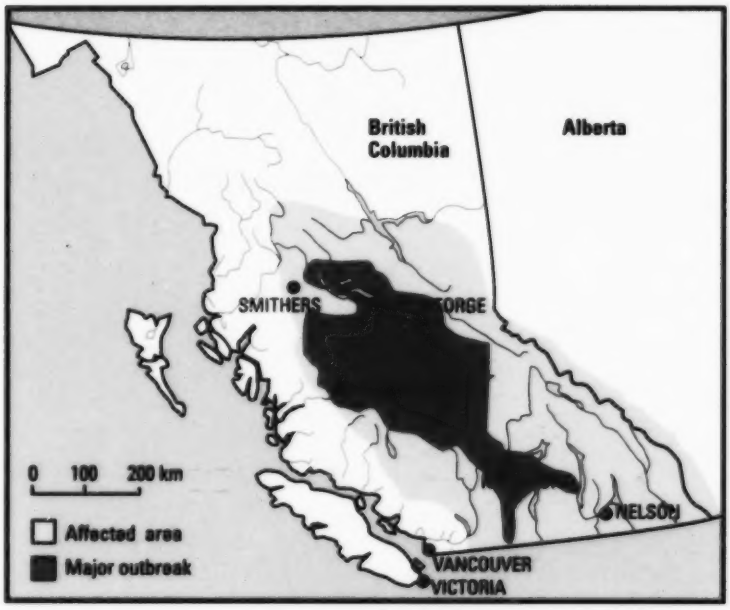

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enable companies to capture value from degraded pine and the waste wood left over from processing. It may also prove worthwhile to develop new and underused species as substitutes for pine in certain products.

For forest communities, the main concern is stability. This concern underlies the first objective of British Columbia's Mountain Pine Beetle Action Plan: "Encourage long-term economic sustainability for communities affected by the epidemic.". The province is placing special emphasis on programs for First Nations, as more than 70 bands have traditional territories within the beetle-infested area. First Nations are particularly vulnerable to the disruption of forest ecosystems, which can affect trapping and hunting and can increase the threat of fire near isolated communities. At the federal level, the Canadian Forest Service is looking at ways to diversify the economy of communities at risk. As well, the Mountain Pine Beetle Initiative offers programs for First Nations on beetle control, forest rehabilitation and reducing fuel loads on reserves.

For industry and communities alike, long-term planning is the key to meeting this unprecedented infestation head on. For both groups, a successful future depends on diversification. The mountain pine beetle outbreak in British Columbia is without question extensive and destructive, but from this destruction may come new growth.

INVASIVE ALIEN SPECIES—AN UNWANTED IMPORT

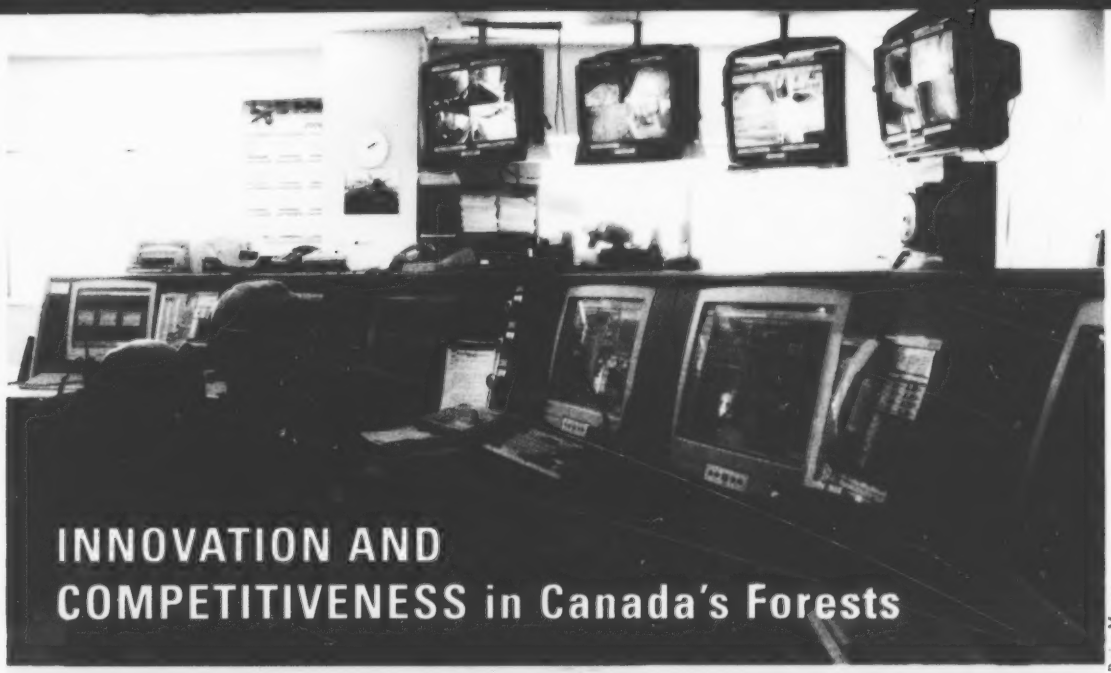
Canada's forests are harbouring aliens. The emerald ash borer, the gypsy moth, European scleroderris canker—these are just some of the invasive alien species threatening our country's timber. Often arriving in the wood used to pack goods in containers, these exotic pests have few, if any, natural predators here. As a result, some of the new arrivals thrive in their new home, multiply quickly and can have devastating effects. In the 20th century, for instance, chestnut blight and Dutch elm disease nearly wiped out the American chestnut and American elm from our southeastern forests. In the 1980s, the gypsy moth defoliated thousands of square kilometres in Quebec and Ontario.

Invasive alien species are attracting more attention than ever here at home and around the world. According to Canada's 2004 Invasive Alien Species Strategy, "The current threats posed by existing and potential invasive alien species are significant and are growing at an alarming rate." The World Conservation Union says alien pests are the second biggest threat to biodiversity after habitat loss.

Canada has played a key part in developing an international standard for treating solid wood packaging to kill pests. Our country is also promoting international standards to reduce the transport and introduction of invasives. As well, Natural Resources Canada is assessing, with other federal departments and with the provinces and territories, the merits of a national forest pest strategy.

Not only do alien invaders wreak havoc on the environment, they also threaten our economy. Once they gain a toehold in the forest, they can consume huge amounts of timber, taking a bite out of the industry's supply. To compound matters, invasive alien species travel in both directions. Other countries fear species that might enter their borders from Canada, and have imposed restrictions that affect our shipments and, in turn, our economy. One example is the European Union's requirement that all Canadian softwood lumber (except cedar) be heat-treated to eliminate pinewood nematodes. This measure coincided with a considerable drop in our lumber exports to the E.U.

Canada is in a double bind when it comes to invasive alien species. On the one hand, we need protection: restrictions to keep foreign pests from entering our forests. On the other hand, we need movement: continued access to our international markets. The challenge is to strike the right balance between protection and movement of goods. Arriving at that balance is in the best interest of everyone, importing and exporting nations alike.



INNOVATION AND COMPETITIVENESS in Canada's Forests

Photo: R. Gal, with permission from Papiers Masson

***"To act on its challenges and attain its vision of being among the world's top three forest products nations, it is crucial that Canada's forest sector accelerate the pace of industry renewal and innovation."* (*Forest Products Association of Canada*, Forest Sector Renewal: Putting the Pieces Together, 2002)**

The past couple of years have been anything but smooth for Canada's forest industry. As described elsewhere in this report (see "Industry and Communities in Transition" on page 50), a number of forces—including changes in supply and demand, competition from low-cost producers, the softwood lumber dispute, higher input costs, a strong Canadian dollar—have combined to create an unsettled climate for this vital Canadian industry.

Yet the demand for forest products is there. In fact, it is growing. According to the Forest Products Association of Canada, the global appetite for forest products is expected to increase by US$4–7 billion a year for the next few years. If the Canadian industry is to help satisfy this appetite, it must adapt to the current climate. Our country's traditional advantages—high-quality fibre that is easy to access and low energy costs—have eroded over time. To keep pace, the forest sector must become more responsive to customers' needs, more diversified, more focused on getting maximum value from the forest resource. The message is clear—innovate or stagnate.

INNOVATION AND THE FOREST SECTOR

At first glance, innovation seems like a simple concept: the creation or adoption of something new. But in the forest sector, innovation means many things. It may mean bringing a new or improved technology, process or service into a company. It may mean designing a new or improved product. It may mean changing the way a firm is organized or conducts its business. It may mean tapping into human ingenuity to dream up processes, products and solutions that no one has ever thought of before.

Innovation has long shaped Canada's forest sector. It gave rise to hardwood pulping, to oriented strandboard, to sawmills able to handle small-diameter logs and to products made from undervalued species. Thanks to innovation, the sector has improved its environmental record by reducing carbon dioxide emissions, using more biofuel for energy and leading the world in certification of sustainable forest management. In some cases, the forest sector has developed its own innovations. In others, it has looked beyond itself, becoming a leader in adopting new

technologies from other manufacturing sectors and from service providers.

Forest innovation has gone through several phases. Initially, because harvesting was the main industrial activity, research focused on improving how trees were removed from the forest. When the sector shifted its focus to production, research shifted to improving productivity and trimming manufacturing costs. Recently, the sector has taken another turn. In the face of stiff competition, marketing has become a key issue. Research is following suit, concentrating on innovations that are more customer-driven, more tailored to the marketplace.

With its history of innovation, Canada's forest sector has grown into a high-tech industry that boasts leading-edge technology. Today's mill employees are more likely to spend their days operating computers than handling hydraulic controls. Yet observers generally agree that the industry has further to go if it hopes to compete head on with other forest producers, many of which outstrip Canada in research and development (R&D) spending. The Canadian forest sector needs to push harder to improve productivity and environmental performance. It needs to develop technologies and products that use fibre more efficiently. It needs to develop more uses for residues, new by-products, alternative fuels. It needs to expand its markets and become more nimble and responsive to customers' expectations. It needs to think ahead, to create ground-breaking products and to find new markets for those products.

The way to innovate effectively, say many in the sector, is to harness the research conducted across the country and the funding available at different levels so that it serves a more unified purpose—namely, to maximize the sustainability, value and marketability of the country's forest resource. With the competitiveness of Canada's forest industry hanging in the balance, it is time for innovative research to be seen, not as a cost, but as an investment.

WHO ARE THE INNOVATORS?

Innovation in Canada's forest sector seldom comes about because of one scientist in one university lab, or one product designer in one company, or one technology specialist in one research centre. It comes about through a unique blend of public- and private-sector researchers, facilities, funding and ideas.

Governments, companies, universities, research institutes—all are vital links in Canada's forest innovation chain. Government researchers, at both the federal and provincial levels, tend to focus on forestry. The

THE MULTIPLICATION OF INNOVATION

Investments in innovation have the potential to pay for themselves many times over. The Canadian Forest Service's Value-Added Program, delivered by Forintek from 1998 to 2002, concluded that "as a result of the program, risks entailed in developing new value-added wood products were reduced, the length of time required to achieve change in manufacturing processes was shortened, and changes occurred that would otherwise have been unlikely to have happened." The study determined that the ratio of benefit to public-sector cost was more than 10:1, an unquestionably worthwhile use of public dollars.

Canadian Forest Service, for instance, is the largest forest science research organization in Canada, with five research centres across the country. Forest companies, on the other hand, concentrate on more competitive R&D related to products and processes; they often employ technology and service providers in their quest for innovation. As for academia, eight Canadian universities house forestry faculties whose work ranges from forest genetics to silviculture to processing to product development. Many other post-secondary institutions contribute to forest R&D through other disciplines, including biology, engineering and environmental studies.

Canada's forest sector is particularly fortunate to be able to draw on the expertise of three non-profit forest research institutes. These institutes, with funding from industry as well as support from governments (especially in the cases of FERIC and Forintek), concentrate on specific areas of forest R&D.

Feric (Forest Engineering Research Institute of Canada) does field-oriented research into the harvesting, processing and transportation of forest resources, as well as into silvicultural operations and small-scale forest operations. FERIC has dozens of projects active across Canada at any given time, each run by a team of scientists, researchers, industry representatives, government partners, universities, technology firms, equipment manufacturers and forest contractors.

Forintek Canada Corp. carries out research for the wood products industry. Forintek focuses on optimizing manufacturing processes, getting higher-value products from the available resource and meeting customers' needs for performance, durability and affordability. By transferring technology to its members, Forintek helps the industry take advantage of market opportunities created by technological innovation.

Paprican (Pulp and Paper Research Institute of Canada) conducts research intended to improve the competitiveness of the pulp and paper industry. Transferring technology to meet its members' needs is a large part of Paprican's mandate. The institute builds its research programs around issues such as product quality and value, cost competitiveness, environmental responsibility and sustainability.

For the forest sector, innovation is crucial at every stage—from stewardship and stand management in the forest to computerized technologies in the mill to product offerings in the market. As competition in the global forest industry heats up, many are realizing the importance of focusing Canada's research capabilities, lining them up so they serve a common end.

FOCUSING INNOVATION

To strengthen its global competitiveness, Canada's forest sector has been re-examining the spread-out research structure that has served it in the past. In 2003, senior representatives from governments and the forest industry got together to create a national innovation strategy for the forest sector. The newly formed Canadian Forest Innovation Council (CFIC) noted, among other things, that the forest sector needs to place more emphasis on "upstream" research—research into how the forest itself (the qualities of wood and species, for instance) links upward to issues of productivity and competitiveness in the marketplace.

In response to CFIC's observation, on March 31, 2006, the Canadian Forest Service unveiled the new national Fibre Centre. This virtual centre—virtual in that it groups together existing research jobs and facilities rather than creating new ones—will develop a research program with three main aims: improving forest productivity, enhancing fibre-quality and improving the forest balance sheet by either upping revenues or cutting production costs. (For more detail, see "Change and Innovation—Keeping Canada a Forestry Leader" on page 66.)

In a parallel move, work is also underway to restructure the three forest research institutes. The hope is

B.C. FOREST RESEARCH—A CLUSTER APPROACH

June 2005 saw the launch of one example of the kind of "cluster" that may soon be guiding forest research at the regional level in Canada. Forest Research Opportunity B.C. aims to bring governments, industry and universities under one virtual research roof so that they can focus and coordinate their forest research. The goal is innovative research, productivity gains and breakthrough technology that serves the broad sector rather than just one component of it.

From an office at Forintek on Vancouver's University of British Columbia campus, Dr. Alan Potter *is* Forest Research Opportunity B.C. As the cluster's executive director, he has spent the past year identifying what kind of forest research is going on in the province and where it is happening.

"There's a big difference," Dr. Potter says, "between forestry research and forest products research. Forestry research is mainly carried out by governments and universities, forest products research mainly by private industry and the industry-sponsored research institutes." Similarly, he explains, there are distinct approaches to R&D in both domains. "Current forest science is very much about ecology and the non-timber values of the forest. But manufacturers are driven mostly by process efficiencies and profit margins. Between the two domains, the link with the ultimate value of products is often lost."

As Dr. Potter sees it, many of the issues confronting the British Columbia forest products industry are shared by the industry throughout Canada. First, there is a need to put aside the idea of endless supply and concentrate instead on sustainable forests that serve non-timber values as well as manufacturing. Second, the pulp and paper industry must look beyond commodities to more specialty products, including new biomaterials and biofuels. Finally, the wood products industry needs to broaden its focus beyond efficient production and tap the potential of engineered building solutions for residential and non-residential construction. "It's key," says Dr. Potter, "that Canada capitalize on any unique advantages its fibre has compared to plantation fibre from the southern hemisphere."

In British Columbia the forest industry faces challenges of its own. Among them is the glut of lodgepole pine salvaged from the mountain pine beetle infestation. Another is the decreased demand for green hemlock products traditionally supplied by the province's coastal mills.

Dr. Potter has concluded that harnessing the forest sector's diverse capabilities in R&D and innovation will help the industry steer through these transitions. "There is excellent potential for innovation to guide the industry in a number of areas—dealing with the impacts of the mountain pine beetle, charting a future for coastal hemlock and developing alternative products such as biofuels and biocomposites for wood fibre historically directed toward pulp and paper."

It is still early days for Forest Research Opportunity B.C. Looking ahead, Dr. Potter expects the research cluster to grow and to concentrate more on technology. "Our focus will be to bring transformative technologies to the forefront. Our role here is to set a strategic agenda that will direct available funding to where it will do the most good for the sector as a whole."

that eventually the Fibre Centre and the institutes will form the core of a new national institute for research into forest products, expected to be the largest of its kind in the world.

Other plans are in the works to establish regional research "clusters" across the country. These clusters will enable provincial governments, universities, industry and other partners to work together on innovations useful to their regions and to bring those innovations to market.

Two such clusters were launched in 2005. The first is science enterprise Algoma. Headquartered in Sault Ste. Marie, Ontario, this cluster focuses on science-based economic development and commercialization. Among other activities, the cluster is currently working to establish the proposed Centre for Excellence in Forest Innovation, as well as an invasive alien species centre. It is also involved in bioproducts and bioenergy activities. The second cluster, Forest Research Opportunity B.C., is profiled on page 65. Innovation has already carried Canada's forest sector far. From the earliest harvesting equipment to the newest GPS systems, from turn-of-the-century sawmills to the latest high-speed paper machines, the forest sector has changed with the times, then changed again. The willingness to change, to invent, to be flexible, to tap into ingenuity—this is the most valuable asset of Canada's forest sector.

CHANGE AND INNOVATION
—Keeping Canada a Forestry Leader

An Interview with Brian Emmett, Assistant Deputy Minister, Canadian Forest Service

For decades, Canada has been a leader in the forest sector. What is our main competitive advantage?

Canada is fortunate to have one of the world's most extensive forest covers and an industry that contributes $80 billion a year to the economy. But having a huge resource endowment does not necessarily translate into competitive advantage. What really makes the difference is our people—a resource we often overlook when we speak of the forest sector.

Our firms are well-managed and generally meet very high environmental and community standards. Our forestry workers are highly trained and skilled, and they have the advanced technology they need to do their jobs. Our governments have set up a governance framework for the forest industry that demands high levels of environmental, social and economic performance.

Forestry is not just about forests; it is also about people and technology because it is people who transform the resource into value. This is where we must look for Canada's main competitive advantage as aggressive competitors vie for our markets.

Canada's forest industry has experienced many challenges in recent years, such as low return on investment, mill closures, the softwood lumber dispute and increased competition. What must Canada do to remain a forestry leader?

As a country and as an industry, we need to work smarter. Specific areas where I see a need for change include technology and innovation, governance, and the skills that will be required of our labour force

I think we are on the right track in terms of technology and innovation, and in restructuring our institutions to get the best value from scarce innovation dollars. We need to determine if we are spending the right amount of money in the right ways, and we need to align our research and development priorities with the needs of our clients. When I say we are on the right track in this regard, I am thinking, for example, of the new national Fibre Centre, which was recently created to group existing research jobs and facilities into one "virtual" centre (for more detail, see the preceding article on "Innovation and Competitiveness in Canada's Forests").

But we still have work to do in this area. For example, our research institutes are more fragmented than they need to be, so their member companies and governments recently agreed to amalgamate them into a single institute to create the world's largest integrated forest research institute. Among the expected advantages are increased efficiencies through the sharing of technology and best practices, and less duplication of effort.

The way governments operate and make decisions in forestry, and the relationship between governments and industry, also need to change.

Governments cannot stay the same while others are changing. They need to be innovative in their decision making and in the way they manage their affairs. I believe the single most important thing people can do in this regard is to be vigilant about the capacity of governments to carry out their roles, and insist on efficiency in government.

The traditional relationship between government and industry has been largely ad hoc—workable relationships that vary considerably from place to place and time to time. Intense competition has put an end to being able to operate this way. We need a more efficient, systematic relationship between government and industry to keep our place as a leading forest nation.

What labour-related challenges do you see affecting the future of the forest sector?

On the positive side, we have highly skilled, creative and talented people—the people who have built the huge industry we benefit from today. On the negative side, the industry is facing uneven labour demands, with downsizing and layoffs in some places and employee shortages due to an aging workforce in others.

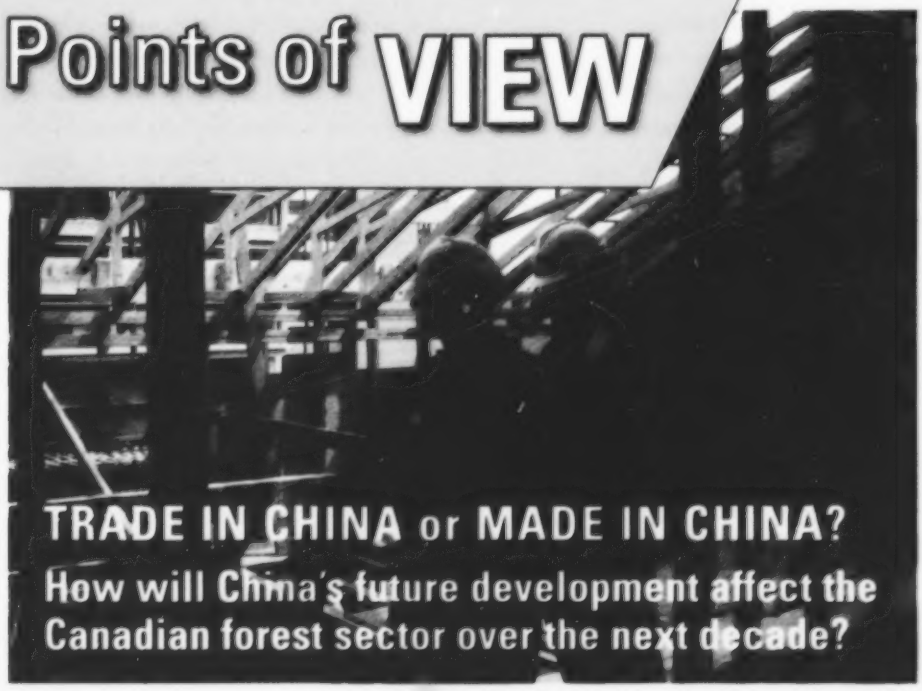
The parts of the industry that are expanding are going to require a new generation of highly trained people, perhaps with much different skills, to keep the sector energetic and dynamic. Our challenge in the coming years will be to build capacity in this regard and to attract highly skilled workers by showing them that there are exciting and meaningful jobs in the forest sector.

What do you predict for the future of Canada's forest industry?

I am optimistic about the future, but I expect that we will have to go through some painful transitions in the coming decade. As governments, as industry and as people, we will need to make farsighted decisions. Some of these decisions will be unpopular and we may make mistakes. But that does not lessen the need for governments to play an ongoing dynamic role in making forest-sector decisions. We must be dedicated to recognizing the changes that are needed and to making the decisions that will promote as easy and as sustainable a transition as possible.

I believe the forest industry will look quite different in 10 or 20 years. As former French president Charles de Gaulle once noted, the only way to get things to stay the same is to change. I think we as a country and an industry have the courage to change and the talent to succeed—that is my prediction for the future.

Points of VIEW



TRADE IN CHINA or MADE IN CHINA?

How will China's future development affect the Canadian forest sector over the next decade?

China's impressive economic growth has helped fan the flames of foreign investment in China. Over the past 20 years, China's economy has grown almost 10 percent annually, according to official Chinese statistics. While many experts express doubts about the accuracy of these figures, few question that China's growth will continue.

Many expect a short-term lag in growth and subsequent job losses, as a result of the potential adjustment of the yuan to international pressures and the need to privatize inefficient state-owned enterprises and banks. Still, several experts feel that China will be able to generate a soft landing for its economy and eventually rebound. The thinking is that China will resume its growth with better fundamentals to play in global markets and a more robust domestic market for its products.

China is Canada's second largest trading partner (after the United States) and both countries endorse the goal of doubling their bilateral trade and investment relationship between 2004 and 2010. This is a significant increase considering that, in 2004, alone two-way trade between the countries was valued at close to $31 billion.

While current trade between Canada and China is very active, questions remain. Will China's expansion result in lowered imports from, and increased exports to, Canada? Will the real opportunity be in selling goods to China's expanding population or in partnering with China to sell goods to the world, taking advantage of the low cost of labour in that country to become more competitive?

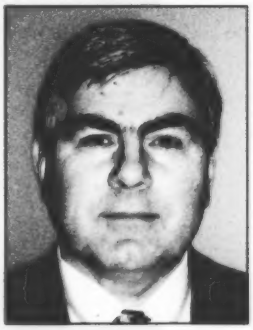
In particular, Canada is interested in whether China's development provides opportunities, or poses a threat, for the Canadian forest sector over the next decade. While China's per capita consumption of wood and paper is still low compared to North American consumption,

it is expected to grow quickly with the country's rapid economic growth and the development of a middle class. Will the Canadian industry be able to benefit from this increasing demand for wood and paper products? Or will the rapidly growing Chinese forest industry meet all of this new demand, or even become a real competitive threat in Canada's traditional forest products export markets?

On the following pages, four Canadian experts on forest products and global markets tackle these questions and present their views. They generally agree that China will continue to require increasing amounts of fibre in the near future to feed its growing forest products sector. Some high-value Canadian wood products may also hold promise, although opportunities are limited. It is clear, however, that China's demand and industrial growth will continue to have a dominating influence on forest products markets over the next 10 years.

Russell E. Taylor

Russell E. Taylor is President of International WOOD Markets Group Inc. He has provided forest industry expertise in the solid wood field to clients in Canada, the United States, New Zealand, Australia, Chile, Brazil, Japan and other countries. He offers strategic advice in areas such as solid wood market investigation, market and business strategy, sawmill and remanufacturing, and engineered wood/panelboard market strategy.



TRADING WITH CHINA LIKELY TO GENERATE LONGER-TERM GAINS FOR CANADA

Mr. Taylor says that, in the short term, China is a limited market for Canadian wood products. "China is much more of a market for Canadian raw materials, such as pulp, industrial lumber and some panels, and even that could change in the near future as China tends to buy mainly on price." In the longer term, Canada is likely to export products that are not currently being sold to China in significant volumes.

"China is much more of a market for Canadian raw materials, such as pulp, industrial lumber and some panels, and even that could change in the near future as China tends to buy mainly on price."

China will continue to require large amounts of fibre to feed its growing wood sector. Mr. Taylor notes that some observers see this as a huge opportunity for Canada. It is unlikely that China's own plantations will meet the demand in the short- and mid-term. Also, China's current imports typically come from countries where illegal logging is rampant. "If international pressures force China to manufacture export products from certified wood, then Canada could offer its certified wood. Still, a very large source of wood—some of it very similar to Canadian wood—can be found much closer to China, in Russia." However, the delivered log and lumber cost from Russia to China is currently very high.

"Chinese middlemen maintain the wood price that comes from these regions at artificially high levels by siphoning off significant mark-ups on Russian log sales," says Mr. Taylor. However, the Russian and Chinese governments are trying to resolve these issues. So, unless certified wood becomes an absolute necessity for China, Russian logs could help meet much of China's fibre needs over the next five to 10 years. Considering that China has also been buying plantations around the world, it is clear that Canada will eventually find it more difficult to export fibre to China.

Canada could help Chinese companies on quality control and value-chain management. Still, Mr. Taylor cautions, this opportunity is slowly fading away. World-class Chinese plants, such as the world's largest door plant, already produce high-quality export products. "Many offshore importers, agents or traders are already working with Chinese companies on quality control through technology transfer. Few Canadian wood importing companies are active in sourcing Chinese products as compared to dozens of American ones."

Mr. Taylor says that rationalization in the Chinese wood sector could happen in some subsectors, such as furniture and flooring, but that its effect may be limited. Any rationalization will likely remove smaller, higher-cost producers, thus having little impact on overall Chinese exports.

He notes that sawmilling in Canada faces no particular threats or opportunities from China's development, as Canada already has some of the lowest-cost delivered logs and sawmills in the world. "Canada could certainly make some interesting inroads in niche products such as wood roof trusses that are already being used in China. But until China builds houses out of wood, Canada is more likely to export mostly raw materials to China for reprocessing than for end products."

Mr. Taylor says that China's incredible growth may result only in small net gains in Canadian commodity product exports. For instance, China could use Canadian logs or lumber

to produce goods that could, in turn, replace similar Canadian products in key markets such as Japan. According to Mr. Taylor, "some products, such as structural lumber, particleboard and OSB [oriented strandboard], could be export growth opportunities for Canadian firms in China. Still, even if China's industry only meets its own growing needs, it will significantly reduce Canada's markets in China for these goods."

For now, says Mr. Taylor, the Chinese finished product exports are likely to have more of an impact in eastern Canada, where more high-value hardwood furniture, flooring and other goods are produced. "Other Canadian commodity sectors, such as softwood and hardwood plywood and even MDF [medium density fibreboard], could also likely feel the impact of planned increased Chinese exports." In the long term, Mr. Taylor concludes, Canadian firms should consider purchasing strategies centred on a variety of Chinese-manufactured products that fit into their existing product mix and customers in North America.

Ian de la Roche

Ian de la Roche became President and Chief Executive Officer of Forintek Canada Corp. in January 1992. Forintek is Canada's national wood products research institute. Its mission is to develop scientific and technical knowledge, applications and solutions that will enhance the competitiveness of its members and the Canadian wood products sector. Dr. de la Roche has more than 30 years of experience in research, strategic planning, new technology commercialization and the development of joint research and development ventures with industry, government and universities.

CREATING A MARKET FOR WOOD HOUSING IN CHINA

Dr. de la Roche says that Canada's brand should stand for certified wood and the knowledge to help other countries build high-quality platform-frame structures. "Finland has been branding for years and there's no reason to think that Canada cannot do the same." In fact, Canada has been working hard to create a market for its structural lumber in housing and to sell higher-value products in China instead of simple raw fibre.

"Finland has been branding for years and there's no reason to think that Canada cannot do the same."

Timber-frame construction in China spans several centuries. However, concrete and mortar have evolved to become the building materials of choice. "Wood has typically been associated with inexpensive housing in China's rural areas, but as the Chinese have moved around the world they have seen luxurious wood houses. Now, as expatriates return to China, they bring with them this new view of things, which creates a potential market for Canadian structural wood," says Dr. de la Roche.

Canada identified China as a potential market for platform-frame construction in the early 1990s. In 1996, it established formal relationships and exchange programs with several

Chinese academic and research organizations. "Through these relationships, Canadians joined a working group that was looking to establish Western-style wood building codes in China. This group's work has paid off as new building and fire codes are now in place."

Dr. de la Roche adds that once the codes were in place, the next step was to create a demand for wood houses. To do so, he says, "the British Columbia government established a demonstration project in Shanghai called Dream Home Canada, featuring houses built on traditional Western platform-frame construction." Furthermore, Canada has produced information to help Chinese specifiers gain a better understanding of wood's environmental benefits, fire retardancy and termite and seismic resistance.

This type of information/demonstration initiative will help position Canada when the demand for housing eventually increases. As the Chinese are saving their money at a much higher rate than Westerners, they will, in time, be in a position to make larger purchases such as houses and cars. Dr. de la Roche comments that "the market will not be for single family dwellings but for less expensive multi family dwellings, made from a combination of materials (wood, steel and concrete). These will provide opportunities for Canadian wood in roof trusses, interior finishing and curtain walls."

Of course, despite new building codes in China and Korea, it will likely take a few years before wood makes a strong showing in housing starts in those countries. But Dr. de la Roche says that the basic foundation has been put in place to maximize wood's potential.

Dr. de la Roche points out that another area where Canada could be a leader is in post-disaster housing reconstruction. Over the past few years, major disasters have created a huge need for replacement housing. "An initiative with good potential is the use of houses made of wood and local materials in a prefabricated-type system to speed up reconstruction. In fact, in Indonesia, 11 such houses have been built and there is a potential agreement being considered that would provide another 10 000 units."

David Cohen

David Cohen is a professor at the University of British Columbia's Faculty of Forestry. He is recognized as a leading researcher in globalization and its impact on the wood sector, with an emphasis on Asia. Since 1989, he has been carrying out research in Japan and China and has provided strategic advice to companies and organizations in Europe, the United States, Canada and New Zealand.

FIBRE, HIGH-END PRODUCTS, STRATEGIC SERVICES ARE CANADA'S BEST OPPORTUNITIES

According to Dr. Cohen, "it's difficult to say whether Canada's forest products sector will benefit or suffer from China's development, as several factors must be weighed. My view is that Canada's best opportunities in China lie in supplying fibre, high-end products and strategic services."

Fibre will definitely continue to be an opportunity for Canada. Dr. Cohen says that it is even possible that China will invest in Canada to acquire that fibre, as it has in other regions of the world. The reason is that most of China's plantations are being used for ecological restoration, not for eventual wood production. "However, 10 to 15 years down the road, China could have extremely efficient plantations of fast-growing species such as genetically modified eucalyptus. Fibre from the Russian Far East will also continue to displace some of the Canadian fibre coming into China."

"Over the next 10 to 15 years, the economy of the world will be determined by how well the Chinese industry is integrated in global markets, so it's important to help them do it right."

With the future in mind, it will be critical for Canadian manufacturers to create a niche for themselves in high-end specialty products, according to Dr. Cohen. China's low labour costs will make that country much more competitive in low-end products. He adds that it remains difficult to sell Canadian structural wood for houses in China as the population does not currently have the disposable income to make large purchases. Higher-end housing has been built in the recent past and has only led to speculation with no real customer base to support it. "That being said, the Chinese are saving their money at a much higher rate than North Americans. Despite lower salaries, they could, therefore, be in the market for housing down the road, and this could be a future opportunity for Canada."

In Dr. Cohen's view, China's focus on the growth of its Gross Domestic Product has left little consideration for the basic business performance of firms in terms of profitability, shareholder value or competitiveness. "In China, there is a basic assumption that supply exists for all increased production. Such basic lack of strategic planning is leading to a growing but unprofitable production of many manufactured wood products."

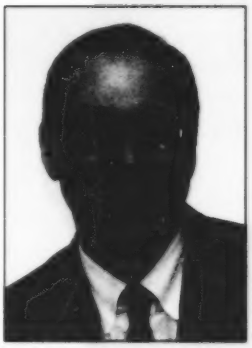
He adds that current plans for production expansion rarely consider markets—more specifically, the unintended market consequences, such as protectionism, that China's unbridled expansion could cause.

Given this scenario, Dr. Cohen suggests that there would be an opportunity for Canadian companies to sell strategic marketing and supply-chain management services to help Chinese companies.

Assessing Canada's opportunities in China is complicated by the difficulty in obtaining strategic business information from China. "Most people working there in positions responsible for the generation of this information basically have sales backgrounds. Canada needs to address that issue," says Dr. Cohen.

Experts need this information to make strategic decisions, especially since there is little real data about China's wood industry, such as plantation areas and volumes, as well as imports and exports. Dr. Cohen says, "The words of experts are therefore probably closer to opinions than actual facts."

Regardless of whether China's development results in a boom or a bust for Canada, one thing is absolutely clear, says Dr. Cohen: "Over the next 10 to 15 years, the economy of the world will be determined by how well the Chinese industry is integrated in global markets, so it's important to help them do it right."



Don Roberts

Don Roberts is Managing Director and Senior Paper and Forest Products Research Analyst with CIBC World Markets Inc. He specializes in international commodity markets, and has collaborated with a number of international forestry organizations to gain a global perspective on the paper and forest products sector. He is consistently ranked by institutional investor surveys as one of the top equity analysts covering the global paper and forest products industry.

PULP IS CANADA'S BEST BET IN CHINA

Mr. Roberts says he has no doubts that China will continue to provide a market for Canadian pulp. "Although Europe remains the largest single consumer of market pulp, Chinese imports have risen by approximately 150 percent over the last five years, with Canada being the largest supplier. There could be an added opportunity for Canada if China decides to invest directly in Canadian mills to upgrade them and produce the fibre it desperately needs."

According to Mr. Roberts, "Few countries have as strong a mercantile philosophy as China and their forest products sector is no exception. But to maintain this approach, China will require fibre and water, two resources that are not found in sufficient quantity within its

own borders. How China deals with these shortages will ultimately determine how much of an opportunity its development will offer for Canada."

Currently, China's main sources of imported virgin fibre are the Russian Far East and Southeast Asia, where illegal logging is widespread. To address the illegal-logging issue, the Chinese government has claimed it supports certified wood, but how this may translate into action remains unclear.

"...if the price of recovered paper rises enough, it could make Canadian virgin fibre even more interesting."

A potential future source of fibre for China lies in its own plantations. However, Mr. Roberts stresses that there is significant uncertainty about China's plantations as there is a large discrepancy between what is observed on the ground and what government reports is on the ground. "They assert that they will be self-sufficient by 2020 to 2030 but many pundits are skeptical; current plantations are not very successful and growth rates are far below targets."

China is also a large consumer of recovered paper and will continue to make increasing use of it as a fibre source in the foreseeable future. This rise in consumption will likely cause a global shortage of recovered paper and will eventually drive up the price. According to Mr. Roberts, "if the price of recovered paper rises enough, it could make Canadian virgin fibre even more interesting."

There is an important link between the issues of water unavailability and fibre scarcity. It has been widely reported that China's water reserves are low, creating shortages in some parts of the country—not surprising, given that China has eight percent of the world's freshwater but 22 percent of its population. Mr. Roberts adds that "what people may not realize is that China has many processing plants that consume water very inefficiently, such as non-wood fibre paper mills and older recycled-based mills (85 percent of China's pulp production is from non-wood fibre). If China decides to close off these water hogs—as much as 25 percent—it could mean a huge need for pulp in the near future." This would mean that China would need to be a major importer of pulp, which would again offer opportunities for Canada.

Despite fibre and water availability issues, the Chinese have become clear net exporters of paper and allied products. "This is most true in the case of boxboard and the coated grades of paper. However, this may soon be true even for newsprint, due to a 23-percent increase in Chinese capacity in 2006 and a further 17-percent rise next year," says Mr. Roberts.

Due to the rapid rise in both its consumption and capacity, the Chinese paper and forest products industry will continue to be the fastest growing in the world. Mr. Roberts concludes, "in spite of the inevitable future restructuring of this sector, and the associated reduction in the number of companies, China will continue to dominate the changes in supply and demand in the global paper industry."

GLOSSARY

ANNUAL ALLOWABLE CUT (AAC)
The amount of timber that is permitted to be cut annually from a particular area. AAC is used as the basis for regulating harvest levels to ensure a sustainable supply of timber.

BIODIVERSITY
The variety and variability within and between living organisms from all sources, such as terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part.

BIOENERGY
The kinetic energy released from biomass when it is eaten, burned or converted into fuel, or the potential energy embodied in biomass.

BIOFUEL
A fuel that is derived from plant biomass, by chemical or geological processes.

BIOMASS
The dry weight of all organic material, living or dead, above or below the soil surface.

BIOTECHNOLOGY
Development of products by a biological process. Production may be carried out by using intact organisms (for example, yeast and bacteria) or by using natural substances (for example, enzymes) from organisms.

BIOME
A major biotic community composed of all the plants and animals in a specific geographical region and smaller biotic communities. The smaller communities in a biome possess similarities in gross external appearances and gross climatic conditions.

BIOTIC
Pertaining to life; concerning the living component of the environment.

CLIMATE CHANGE
An alteration in measured quantities (for example, precipitation, temperature, radiation, wind and cloudiness) within the climate system that departs significantly from previous average conditions and is seen to endure, bringing about corresponding changes in ecosystems and socio-economic activity.

CO-GENERATION
The simultaneous production of electricity and heat from steam.

CONTAINERBOARD
Component materials used in the manufacture of shipping containers and other corrugated board products.

ECOSYSTEM
A dynamic system of plants, animals and other organisms, together with the non-living components of the environment, functioning as an interdependent unit.

ENGINEERED WOOD PRODUCTS
A composite wood product made from glued fibre, lumber and/or veneer to meet specific design criteria.

FIBRE (WOOD)
A material in which the wood is reduced to predominantly individual fibres by mechanical or chemical means, or a combination of the two. Virgin fibre is derived from trees not previously processed into paper; recycled fibre has been reclaimed from a previous product such as old newsprint and reprocessed and incorporated into a new product.

FOREST
A complex community of plants and animals in which trees are the most conspicuous members and where the tree crown density—the amount of compactness of foliage in the tree tops—is greater than 10 percent.

FOREST DEPENDENT COMMUNITY
A community that depends on a forest region for at least 50 percent of its total economy.

FOREST TYPE
A group of forest areas or stands of similar composition (that is, species, age, height and density) which differentiates it from other such groups.

GREENHOUSE GASES
Those gases, such as water vapour, carbon dioxide, tropospheric ozone, nitrous oxide and methane, that are transparent to solar radiation but opaque to longwave radiation. Their action is similar to that of glass in a greenhouse.

GROSS DOMESTIC PRODUCT (GDP)
The total value of all goods and services produced within Canada during a given year.

HARDWOOD
Trees whose leaves are not persistent and fall off at the end of a defined growing season or during a period of temperature or moisture stress. This is the predominant tree type in deciduous forests.

INNOVATION
The use of a new idea, material or technology to produce new goods or services or to change the way in which goods or services are produced or distributed. Innovation can include improved managerial systems, new production techniques, new technology, the results of research and development, or the application of information technologies.

INVENTORY (FOREST)
A survey of a forest area to determine data such as area, condition, timber, volume and species for a

specific purpose, such as planning, purchasing, evaluating, managing or harvesting.

KILN
A chamber having controlled air flow, temperature and relative humidity, which is used for drying lumber, veneer and other wood products.

LAMINATED BEAM
A beam consisting of two or more layers of wood, glued, nailed or otherwise bonded together, with the grain going in the same direction.

MEDIUM DENSITY FIBREBOARD (MDF)
A wood-based composite material that uses wood fibre rather than particles, strands or veneers to produce board or sheet products. It is made by combining wood fibre with a synthetic resin or other bonding system and applying pressure and heat to create a compressed fibreboard with a density ranging from 0.60 to 0.80 g/cm^3 (grams per cubic centimetre). MDF is increasingly used in areas such as furniture manufacture, cabinetry, joinery, shelving, craftwork and flooring.

NON-TIMBER FOREST PRODUCTS
Any commodity obtained from the forest that does not necessitate harvesting trees. It includes game animals, fur-bearers, nuts and seeds, berries, mushrooms, oils, foliage, medicinal plants, peat, fuelwood, forage, etc.

NON-TIMBER VALUE
A value within the forest other than timber that includes, but is not limited to, biological diversity, fisheries, wildlife, minerals, water quality and quantity, recreation and tourism, cultural heritage values, and wilderness and aesthetic values.

ORIENTED STRANDBOARD (OSB)
A panel made from wood strands oriented in the face layers and normally cross-oriented in the core layer, combined under heat and pressure with a water-resistant binder. Orienting the strands greatly increases the bending stiffness and strength of the panels.

PARTICLE (WOOD)
A small element produced mechanically from wood. Particles can be further subdivided based on their geometry into categories or types such as chips, flakes, shavings, sawdust and slivers. Particle dimensions are typically 25 mm or less along the grain direction and of varying widths and thicknesses.

PARTICLEBOARD
A panel made from wood particles, which are often the residue from other wood processing operations, combined under heat and pressure with a water-resistant binder. It differs from fibreboard in that the wood particles are larger than fibres.

PLANETARY WAVE
A wave in the atmospheric circulation, in one of the principal zones of the westerly winds, characterized by a great length and a significant amplitude.

PROTECTED AREA
A geographically defined area which is designated or regulated and managed to achieve specific conservation objectives.

SILVICULTURE
The art and science of controlling the establishment, growth, composition, health and quality of forests and woodlands to meet the diverse needs and values of landowners and society on a sustainable basis.

SOFTWOOD
Cone-bearing trees with needles or scale-like leaves. This is the predominant tree type in coniferous forests.

STEWARDSHIP
The science, art and skill of responsible and accountable management of resources.

STRAND (WOOD)
Wood elements specifically manufactured to have predetermined and uniform thickness and length, and of variable width. Typical strands for manufacture of oriented strandboard can range in length from 50 to 200 mm, thickness from 0.5 to 1.3 mm, and width from 5 to 50 mm.

STRUCTURAL LUMBER
Wood suitable for framing and load-bearing structures essentially by virtue of its strength.

SUSTAINABLE FOREST MANAGEMENT
Management that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things while providing environmental, economic, social and cultural opportunities for present and future generations.

VALUE-ADDED PRODUCT
A product that has had value added to it through further processing. Examples include windows, doors, kitchen cabinets, flooring and mouldings. Value-added pulp and paper products include items such as packaging, diapers, coated papers, tissue, business papers, stationery and other consumer paper products.

CONTACTS

The following is a list of organizations that can provide you with additional information about Canada's forests and the forest sector.

BC Market Outreach Network
1200-1130 West Pender Street
Vancouver BC V6E 4A4
Telephone: 604-685-7507 /
1-866-992-2266
Fax: 604-685-5373
E-mail: info@bcmon.ca
Web site: www.bcforestinformation.com

Canadian Federation of Woodlot Owners
304-259 Brunswick Street
Fredericton NB E3B 1G8
Telephone: 506-459-2990
Fax: 506-459-3515
E-mail: nbfwo@nbnet.nb.ca

Canadian Forestry Association
200-1027 Pembroke Street East
Pembroke ON K8A 3M4
Telephone: 613-732-2917 /
1-866-441-4006
Fax: 613-732-3386
E-mail: cfa@canadianforestry.com
Web site: www.canadianforestry.com

Canadian Institute of Forestry
504-151 Slater Street
Ottawa ON K1P 5H3
Telephone: 613-234-2242
Fax: 613-234-6181
E-mail: cif@cif-ifc.org
Web site: www.cif-ifc.org

Canadian Model Forest Network
Secretariat
Sir William Logan Building, 7th floor
580 Booth Street
Ottawa ON K1A 0E4
Telephone: 613-992-5874
Fax: 613-992-5390
E-mail: modelforest@nrcan.gc.ca
Web site: www.modelforest.net

Canadian Wildlife Federation
350 Michael Cowpland Drive
Kanata ON K2M 2W1
Telephone: 613-599-9594 /
1-800-563-WILD
Fax: 613-599-4428
E-mail: info@cwf-fcf.org
Web site: www.cwf-fcf.org

Council of Forest Industries
Pender Place I Business Building
1501-700 West Pender Street
Vancouver BC V6C 1G8
Telephone: 604-684-0211
Fax: 604-687-4930
E-mail: info@cofi.org
Web site: www.cofi.org

Ducks Unlimited Canada
1 Mallard Bay at Highway 220
P.O. Box 1160
Stonewall MB R0C 2Z0
Telephone: 204-467-3000 /
1-800-665-3825
Fax: 204-467-9028
E-mail: webfoot@ducks.ca
Web site: www.ducks.ca

Forest Engineering Research Institute of Canada (FERIC)
580, boulevard St-Jean
Pointe-Claire QC H9R 3J9
Telephone: 514-694-1140
Fax: 514-694-4351
Web site: www.feric.ca

Forest Products Association of Canada
410-99 Bank Street
Ottawa ON K1P 6B9
Telephone: 613-563-1441
Fax: 613-563-4720
E-mail: ottawa@fpac.ca
Web site: www.fpac.ca

Forintek Canada Corp.
2665 East Mall
Vancouver BC V6T 1W5
Telephone: 604-224-3221
Fax: 604-222-5690
E-mail: info@forintek.ca
Web site: www.forintek.ca

Government of Alberta
Ministry of Sustainable Resource Development
[Public Lands and Forests Division]
Petroleum Plaza South Tower
9915-108 Street
Edmonton AB T5K 2G8
Telephone: 780-415-1396
Fax: 780-422-6068
Web site: www.srd.gov.ab.ca

Government of British Columbia
Ministry of Forests and Range
[Forest Practices Branch]
727 Fisgard Street, 9th floor
P.O. Box 9513 Stn. Prov. Govt.
Victoria BC V8W 9C2
Telephone: 250-387-1946
Fax: 250-387-1467
Web site: www.gov.bc.ca/for

Government of Canada
Natural Resources Canada
[Canadian Forest Service]
Sir William Logan Building, 8th floor
580 Booth Street
Ottawa ON K1A 0E4
Telephone: 613-947-7341
Fax: 613-947-9033
E-mail: cfs-scf@nrcan.gc.ca
Web site: www.nrcan.gc.ca/cfs-scf

Government of Manitoba
Department of Conservation
[Forestry Branch]
200 Saulteaux Crescent
P.O. Box 70
Winnipeg MB R3J 3W3
Telephone: 204-945-7989
Fax: 204-948-2671
E-mail: forestinfo@gov.mb.ca
Web site:
www.gov.mb.ca/conservation/forestry

Government of New Brunswick
Department of Natural Resources
[Forest Management Branch]
Hugh John Flemming Forestry Centre
1350 Regent Street
P.O. Box 6000
Fredericton NB E3B 5H1
Telephone: 506-453-2516
Fax; 506-453-6689
Web site: www.gnb.ca

Government of Newfoundland and Labrador
Department of Natural Resources
[Forest Resources]
Natural Resources Building, 5th floor
50 Elizabeth Avenue
P.O. Box 8700
St. John's NL A1B 4J6
Telephone: 709-729-2704
Fax: 709-729-3374
Web site: www.nr.gov.nl.ca/forestry

Government of Nova Scotia
Department of Natural Resources
[Forestry Division]
Arlington Place
664 Prince Street
P.O. Box 68
Truro NS B2N 5B8
Telephone: 902-893-6350
Fax: 902-893-5613
Web site: www.gov.ns.ca/natr/forestry

Government of Nunavut
Department of Environment
P.O. Box 1000 Station 1300
Iqaluit, NU X0A 0H0
Telephone: 867-975-7700 /
1-866-222-9063
Fax: 867-975-7742
Web site: www.gov.nu.ca

Government of Ontario
Ministry of Natural Resources
[Forests Division]
Roberta Bondar Place
400-70 Foster Drive
Sault Ste. Marie ON P6A 6V5
Telephone: 705-945-6746 /
1-800-667-1940
Fax: 705-945-5977
Web site: www.mnr.gov.on.ca

Government of Prince Edward Island
Department of Environment, Energy and Forestry
[Forests, Fish and Wildlife Division]
Jones Building
11 Kent Street
P.O. Box 2000
Charlottetown PE C1A 7N8
Telephone: 902-368-5000
Fax: 902-368-5830
Web site: www.gov.pe.ca/enveng

Government of Quebec
Ministère des Ressources naturelles et de la Faune
[Secteur des forêts]
880, chemin Sainte-Foy, 10e étage
Québec QC G1S 4X4
Telephone: 418-627-8652
Fax: 418-528-1278
E-mail: foretquebec@mrnf.gouv.qc.ca
Web site: www.mrnf.gouv.qc.ca

Government of Saskatchewan
Department of Environment
[Compliance, Fire and Forest Division]
526-3211 Albert Street
Regina SK S4S 5W6
Telephone: 306-787-4931
Fax: 306-787-2947
Web site: www.se.gov.sk.ca/forests

Government of the Northwest Territories
Department of Environment and Natural Resources
[Forest Management Division]
149 McDougal Road, 2nd floor
P.O. Box 7
Fort Smith NT X0E 0P0
Telephone: 867-872-7700
Fax: 867-872-2077
Web site: forestmanagement.enr.gov.nt.ca

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Department of Energy, Mines and Resources
[Forest Management Branch]
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P.O. Box 2703
Whitehorse YT Y1A 2C6
Telephone: 867-456-3999 /
1-800-661-0408 Ext. 3999
Fax: 867-667-3138
E-mail: forestry@gov.yk.ca
Web site: www.emr.gov.yk.ca/forestry

International Model Forest Network
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Ottawa ON K1G 3H9
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Maritime Lumber Bureau
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Amherst NS B4H 4A1
Telephone: 902-667-3889
Fax: 902-667-0401
E-mail: mlb@ns.sympatico.ca
Web site: www.mlb.ca

National Aboriginal Forestry Association
875 Bank Street
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Fax: 613-233-4329
Web site: www.nafaforestry.org

National Forest Strategy Coalition
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Ottawa ON K1A 0E4
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E-mail: info@foreststrategy.ca
Web site: www.foreststrategy.ca

National Round Table on the Environment and the Economy
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Ottawa ON K1R 7Y3
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Pulp and Paper Research Institute of Canada (Paprican)
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Pointe-Claire QC H9R 3J9
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Fax: 514-630-4134
Web site: www.paprican.ca

Quebec Forest Industry Council
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Sustainable Forest Management Network
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Tree Canada Foundation
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Web site: www.treecanada.ca

Wildlife Habitat Canada
310-1750 Courtwood Crescent
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READER FEEDBACK

Was the information in this year's *State of Canada's Forests* report useful to you?
- ❑ Very useful
- ❑ Somewhat useful
- ❑ Not useful

Did you consider the information factual and credible?
- ❑ Very
- ❑ Somewhat
- ❑ Not at all

Were the statistics useful?
- ❑ Very
- ❑ Somewhat
- ❑ Not at all

Was the report easy to read?
- ❑ Too technical
- ❑ Just right
- ❑ Too simple

How did you find the layout of the report?
- ❑ Well designed
- ❑ Difficult to follow

Which sections of the report interested you the most?
- ❑ Overview
- ❑ Year in Review
- ❑ Profiles Across the Nation
- ❑ Statistical Trends
- ❑ Mill Closures and Investments
- ❑ Articles
- ❑ Points of View

Which category best describes your affiliation?
- ❑ Provincial / territorial government
- ❑ Federal government
- ❑ General public
- ❑ Industry
- ❑ Education
- ❑ Other

Additional comments or suggestions:

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The State of Canada's Forests is available on the web at **www.nrcan.gc.ca/cfs-scf/sof/**

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